Supreme Court, U.S.
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No. 06-

IN THE

Supreme Court of the United States

ON DEMAND MACHINE CORPORATION,

Petitioner,

v.

INGRAM INDUSTRIES, INC.,
LIGHTNING SOURCE, INC.,
and AMAZON.COM, INC.,

Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

PETITION FOR A WRIT OF CERTIORARI

DAVID B. B. HELFREY
HELFREY, SIMON & JONES
120 South Central Avenue
St. Louis, Missouri 63105
(314) 725-9100

WILLIAM B. CUNNINGHAM
Counsel of Record
MCPHERSON D. MOORE
POLSTER, LIEDER,
WOODRUFF & LUCCHESI
12412 Powerscourt Drive
Suite 200
St. Louis, Missouri 63131
(314) 238-2400

Attorneys for Petitioner

203408

COUNSEL PRESS
(800) 274-3321 • (800) 359-6859

QUESTION PRESENTED

Whether the Federal Circuit has violated its constitutional authority by rendering moot 35 U.S.C. § 112, ¶ 2 in holding that "the claims cannot be of broader scope than the invention that is set forth in the specification."

STATEMENT PURSUANT TO RULE 29.6

Petitioner, On Demand Machine Corporation, has no parent corporation and no publicly held company owns 10% or more of its stock.

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On Demand Machine Corporation ("ODMC") hereby petitions for a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit entered on March 31, 2006.

OPINIONS BELOW

The opinion of the United States Court Of Appeals for the Federal Circuit dated March 31, 2006, is reported at 442 F.3d 1331, and is reproduced at App at 1a. The court's order denying the petition for rehearing and for rehearing *en banc* is not reported and is reproduced at App. E at 99a. The judgment of the United States District Court for the Eastern District of Missouri dated July 23, 2004 and October 28, 2004, is not reported and is reproduced App. B & C, at 28a and 34a. The District Court's claim interpretation (*Markman*) order is reproduced at App. D at 35a.

JURISDICTION

The judgment of the United States Court Of Appeals for the Federal Circuit to be reviewed was entered on March 31, 2006. The Federal Circuit Court issued an order denying a timely petition for rehearing *en banc* on June 20, 2006. This petition is timely under 28 U.S.C. § 2101 and Supreme Court Rule 13.1. The jurisdiction of this Court is invoked under 28 U.S.C. § 1254(1).

STATUTORY PROVISIONS INVOLVED

This case concerns the requirements for a patent set forth in § 112 of the Patent Act, 35 U.S.C. § 112, which provides in its paragraphs 1 and 2:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

STATEMENT OF THE CASE

This case raises a question of broad and general importance: What is the proper measure of the scope of an invention under the Patent Act, in particular under 35 U.S.C. § 112? The answer to this question affects every pending U.S. patent application, every unexpired U.S. patent, and every pending U.S. infringement suit. The scope of protection to be determined in this case will also have material significance in the U.S. patent policy. In fact, this issue concerns anyone or any entity affected by U.S. patent procedure.

The bright-line rule as ruled by the Federal Circuit has voided the scope of protection recognized under 35 U.S.C. § 112, ¶ 2. That statute clearly differentiates the scope of protection afforded by the claims, from what is disclosed by the rest of the specification. The Federal Circuit has now removed that distinction. This bright line rule has further created conflict among the Federal Circuit holdings with respect to the scope of protection afforded by valid patents.

The Patent at Issue and Relevant Background

This patent infringement case arises out of U.S. Pat. No. 5, 465, 213, by inventor Harvey Ross (the "Ross patent"). The Ross patent was assigned to and is owned by Petitioner ODMC. ODMC initiated this infringement against the Respondents Ingram Industries, Inc. ("Ingram"), its subsidiary Lightning Source, Inc. ("Lightning"), and Amazon.com, Inc. ("Amazon").

ODMC, a small St. Louis, Missouri corporation, was founded by Harvey Ross (deceased). The Ross patent discloses and claims methods for printing books on demand. ODMC was founded and funded to develop and commercialize the methods described in the Ross patent.

Mr. Ross was 68 years old when he conceived his invention in early 1990. After a lifetime of inventing and developing complex systems as an electrical engineer for Motorola and McDonnell Douglas, Mr. Ross served as a consultant to a number of technology companies in the St. Louis area. His patent application was filed on July 27, 1990, and a continuation-in-part application was filed on July 12, 1993. The Ross patent was granted on November 7, 1995. Mr. Ross worked full time to develop and market his invention.

In an effort to market his invention, Mr. Ross contacted defendant Ingram, well before his patent issued in 1995. Mr. Ross explained the advantages of his methods to Ingram. Mr. Ross showed Ingram how more titles would be available for sale by Ingram while slow moving titles kept in inventory could be reduced. On several occasions from 1993 – 1996, Mr. Ross met and corresponded with Ingram to license Ingram under the Ross patent or to secure an investment in Mr. Ross' company. In February 1995, Ingram entered into a one-year confidential relationship agreement with Mr. Ross' company, then known as Westfield Associates. Mr. Ross then disclosed to Ingram details of his pending patent application and his business plans.

During the summer of 1996, without advising Mr. Ross, Ingram retained patent counsel to review the patent, and informed Mr. Ross that it was not interested in taking a license under his patent.

Ingram then initiated a feasibility study to start a service to print books on demand. In early November, 1997, Ingram announced the launch of a new company, now known as Lightning Source, to store books in a digital library and print each book one book at a time, as ordered by the retailer. Within weeks of the launch of Lightning, Mr. Ross informed Ingram that Lightning infringed his patent and needed a license. Lightning refused the license. Mr. Ross corresponded with Ingram/Lightning over the next few years regarding a license.

Because new prior art was made known to ODMC by other prospective licensees, ODMC requested that the Patent and Trademark Office (PTO) reexamine the Ross patent. In this reexamination, the patentability of claims 7 and 8 of the Ross patent was confirmed without amendment to these claims, and claims 1-6 were cancelled.

Although Respondents, in their appellate brief, demeaned Mr. Ross' contribution by referring to it as a "modest improvement", Lightning implemented Mr. Ross' method. As noted in its 1998 press release, Lightning was awarded the "prestigious 'Innovator of the Year' award from Xplor International, the electronic document systems association".

Ingram, headquartered in Nashville, is one of America's largest privately owned companies. Ingram is a holding company having numerous subsidiaries, including Lightning. Ingram Book Company, another subsidiary, is the largest wholesale distributor of trade books in the United States.

Amazon is headquartered in Seattle and is the leading on-line bookseller in the world. In 2000, Lightning and Amazon entered into a contract whereby Lightning would print books on demand, as ordered by Amazon and its customers.

At trial, ODMC withdrew claim 7 so that only claim 8 went to the jury.

Claim 8 At Issue

Claim 8 recites:

> "A method of high-speed manufacture of a single copy of a book comprising the steps of: storing the text of a plurality of books in a computer, storing sales information relating to said plurality of books in a computer, providing means for a customer to visually review said sales information, commanding a computer to print the text of a selected one of said books in response to a customer's selection, retrieving the text of said selected one of said books

> from a computer, printing the text of said selected one of said books on paper pages, binding said paper pages together to from said selected one of said books, storing graphical information corresponding to the cover of each of said books, commanding a computer to reproduce said graphical information on a book cover, and binding said paper pages together with said cover therearound."

Proceedings In The District Court

The trial court held a *Markman* hearing and issued a comprehensive and lengthy Order setting forth its interpretation of the disputed claim terms. In this case, the district court, in construing Claim 8, had the benefit of the parties' *Markman* briefs totaling over 126 pages, and a 3 ½ hour *Markman* hearing. Thereafter the district court issued a comprehensive 46 page claim construction order. (App. D at 32a).

The case was tried to a jury for seventeen (17) days from February 9 to March 3, 2004. The jury found that: (1) Lightning infringed or jointly infringed and induced the infringement of Claim 8; (2) Amazon infringed or jointly infringed Claim 8; (3) Ingram induced infringement of Claim 8; (4) Defendants failed to prove invalidity; (5) Defendants willfully infringed; and (6) awarded $15,000,000 in damages.

On appeal, the Appellants did not appeal the jury's finding that the Ross patent was not proven invalid. Hence there is no issue in this case as to the Ross patent being invalid for lack of enablement or written description.

The Federal Circuit Decision (the "Decision")

Respondents timely appealed to the Federal Circuit, complaining that the district court erred in its claim construction. Respondents essentially complained that the claim construction by the district court was broader than the specification allows.

Since only claim 8 of the Ross patent had been presented for jury verdict, the Federal Circuit Panel (the "Panel") reviewed the disputed claim terms in that context. *On Demand Machine Corp. v. Ingram Industries, Inc.*, 442 F.3d at 1337. Reviewing *de novo* the district court's claim construction, the Panel issued a new rule that "**the claims cannot be of broader scope than the invention that is set forth in the specification**". *On Demand Machine Corp.*, (App. A at 1a). (Emphasis added). Thus, after a three-week jury trial, the district court's claim construction now stands reversed. Although Appellants raised a plethora of claim construction and other issues, the Panel had only the benefit of abbreviated briefs addressing each of the multiple disputed claim terms, and a limited oral argument. Against that background, the Panel found that five of the district court's claim interpretations were in error and found that no reasonable jury could have found infringement on the proper claim construction. Without constitutional authority, this *Decision* has rendered 35 U.S.C. § 112, ¶ 2 moot. As such, this *Decision* renders the claims superfluous and dramatically limits the scope of all issued patents.

REASONS FOR GRANTING THE PETITION

The *Decision* is in direct conflict with this Court's precedents, the Federal Circuit's prior *en banc* precedents, and the text of 35 U.S.C. § 112, ¶ 2. In following this Court's precedents and in following the statutory authority mandated by Congress under § 112, ¶ 2, the Federal Circuit has recognized that the scope of protection, defined by the claims, can be broader than what is described in the specification. The *Decision*'s holding that "the claims cannot be of broader scope than the invention that is set forth in the specification" clearly violates the prior Federal Circuit's *en banc* rulings. Additionally, the *Decision*'s holding further enhances the split among the Federal Circuit with respect to the claim scope.

I. IN RENDERING 35 U.S.C. § 112, ¶ 2 MOOT, THE FEDERAL CIRCUIT HAS DEPARTED FROM PRECEDENTS OF THIS COURT, AS WELL AS ITS OWN PRECEDENTS, THAT THE CLAIMS CAN BE BROADER IN SCOPE THAN WHAT IS DESCRIBED IN THE REST OF THE SPECIFICATION

A. Prior Supreme Court Rulings Establish That The Claims Measure The Patent Grant

This Court has well established that the claims ascertain "what it is that is patented". *Merril v. Yeomans*, 94 U.S. 568, 570 (1876). It is established that the claims "measure the invention and determine the limits of the patent protection." *Cont'l. Paper Bag Co. v. E. Paper Bag Co.*, 210 U.S. 405, 419 (1908). The claims define the scope of the patent grant. *Markman v. Westview Instruments*, 517 U.S. 370, 374 (1996).

B. The Supreme Court Ruled In Mccarty That Elements Not Mentioned In The Claims Should Not Limit The Claims

In relying on principles set by this Court over one hundred and ten years ago, the Federal Circuit Court has recognized that the specification should not be read to limit language that is actually present in the claims. *Renishaw PLC v. Marposs Societa' Per Azioni Marposs Corp.*, 158 F.3d 1243, 1249 (Fed. Cir. 1988)(*citing*: *McCarty v. Lehigh Valley Co.*, 160 U.S. 110 (1895)). In other words, the scope of protection, as defined by the claims, can be broader than what is described in the rest of the specification.

In *McCarty*, the patent at issue related to improvements to railroad trucks and in particular to bolster plates that connect the railroad car to the railroad truck. *McCarty*, 160 U.S. at 113. The patentee claimed a plate in combination with other components of the bolster. *Id.* at 119. In reviewing the claim, this Court noted that although side truss springs

were described in the specification and drawings, the claims did not suggest that the bolster ends rest upon the springs. *Id.* at 116. The patentee, however, suggested at trial that this feature should be read into the claim. *Id.* The Court, however, ruled that:

> "There is no suggestion in either of these claims that the ends of the bolster rest upon springs in the side trusses, although they are so described in the specification and exhibited in the drawings. It is suggested, however, that this feature may be read into the claims for the purpose of sustaining the patent. While this may be done with a view of showing the connection in which a device is used, and proving that it is an operative device, we know of no principle of law which would authorize us to read into a claim an element which is not present, for the purpose of making out a case of novelty or infringement. The difficulty is that *if we once begin to include elements not mentioned in the claim in order to limit such claim* and avoid a defence of anticipation, *we should never know where to stop.*" *Id.* (Emphasis supplied)

C. The Federal Circuit Has Interpreted McCarty To Apply To Questions Of Claim Scope For Purposes Of Ascertaining Infringement

Although the facts of the *McCarty* decision concerned invalidity based on prior art, the Federal Circuit has relied on the above-quoted language of the *McCarty* decision in reaching conclusions that the details of the specification should not be read to limit claim language for purposes of determining infringement. *Renishaw*, 158 F.3d at 1249. In *Renishaw*, the Federal Circuit affirmed the district court's ruling on claim construction that absent a particular definition created by the applicant, the claim terms are to be given their ordinary and accustomed meaning. *Id.* at 1248. The *Renishaw* court held that "[w]ithout any claim term that is susceptible

of clarification by the written description, there is no legitimate way to narrow the property right." *Id.* In relying on *McCarty* decision, the *Renishaw* court stated:

> "'the Supreme Court has clearly stated the rationale for this requirement: We know of no principle of law which would authorize us to read into a claim an element which is not present, for the purpose of making out a case of novelty or infringement. The difficulty is that if we once begin to include elements not mentioned in the claim in order to limit such claim. . . , we should never know where to stop'." *Id.* at 1249. (*quoting*, *McCarty*, 160 U.S. at 116.)

The *Renishaw* court reiterated "absent a special and particular definition created by the patent applicant, terms in a claim are to be given their ordinary and accustomed meaning." *Id.* at 1249 (*see York Prods., Inc. v. Central Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1572 (Fed. Cir. 1996). The *Renishaw* court further prohibited adding "a narrower modifier before an otherwise generally term that stands unmodified in a claim." *Renishaw*, 158 F.3d at 1248. As an example, the *Renishaw* court provided that "if an apparatus claim recites a general structure (e.g. a noun) without limiting that structure to a specific subset of structures (e.g. with an adjective), we will generally construe the claim to cover all known types of that structure that are supported by the patent disclosure." *Id.* at 1250.

The Federal Circuit once again followed the *McCarty* ruling in affirming patent infringement. *Johnson Worldwide Assoc. v. Zebco Corp.*, 175 F.3d 985, 991 (Fed. Cir. 1999). In relying on *McCarty* and *Renishaw*, the *Johnson* court held that "claim terms cannot be narrowed by reference to the written description or prosecution history unless the language of the claims invites references to those sources." *Id.* (*citing McCarty*, 160 U.S. at 116 ("If we once begin to include elements not mentioned in the claim in order to limit such claim...we should never know where to stop.")

In quoting the subject language of *McCarty*, the Federal Circuit has omitted the words "and avoid a defense of anticipation" (e.g., *Renishaw)* and even omitted more words from that language (as in *Johnson WorldWide*) to reflect that the application of the *McCarty* language is not limited to a patent owner's attempt to make a claim narrower in order to *avoid* a prior art argument of invalidity, but rather applies to not importing limitations from a preferred embodiment to limit the language of a claim.

Under its "bedrock principle" statement that claims define the invention, the recent *en banc Phillips* court relied on *McCarty. Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005)(*en banc*). In the *Phillips'* claim interpretation holding, the Federal Circuit held:

> "It is a *'bedrock principle'* of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.' *Innova, 381 F.3d at 1115*; see also *Vitronics, 90 F.3d at 1582* ('we look to the words of the claims themselves ... to define the scope of the patented invention'); *Markman, 52 F.3d at 980* (*'The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of claims.'*). That principle has been recognized since at least 1836, when Congress first required that the specification include a portion in which the inventor 'shall particularly specify and point out the part, improvement, or combination, which he claims as his own invention or discovery.' Act of July 4, 1836, ch. 357, § 6, 5 Stat. 117, 119. In the following years, the Supreme Court made clear that the claims are 'of primary importance, in the effort to ascertain precisely what it is that is patented.' *Merrill v. Yeomans, 94 U.S. 568, 570, 24 L. Ed. 235, 1877 Dec. Comm'r Pat. 279 (1876).*" *Phillips*, 415 F.3d at 1312 (Emphasis added).

The holding in the *Decision* that "the claims cannot be of broader scope then the invention that is set forth in the specification" is directly contrary to § 112, ¶ 2, this Courts' prior rulings, and the Federal Circuit's own *en banc* case law.

D. A Long Line Of Federal Circuit Rulings Hold That Claim Language Can Be Broader Than The Rest Of The Specification

A long line Federal Circuit decisions that hold that preferred embodiments of the specification are not claim limitations and should not be read into the claims. The drawings and specifications may describe preferred embodiments of an invention, but preferred embodiments are not claim limitations and are not to be read into the claims. *Electro Med. Sys. S.A. v. Cooper Life Sciences*, 34 F.3d 1048, 1054 (Fed. Cir. 1994). The *Electro* court further emphasized that "although the specification may well indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is **broader** than such embodiments." *Id.* (Emphasis added). (*See also Resonate Inc. v. Alteon Websystems, Inc.*, 338 F.3d 1360, 1364-65 (Fed. Cir. 2003)("a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.")(*Superguide Corp. v. DirectTV Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004)("a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.")).

Time after time the Federal Circuit has warned that specific descriptions in preferred embodiments section of a patent specification are not to be imported into the claims as limitations. The Federal Circuit has stated: "[r]eferences to a preferred embodiment, such as those often present in a specification, are not claim limitations (citation omitted). This court has cautioned against limiting the claimed

invention to preferred embodiments or specific examples in this specification." *Transmatic, Inc. v. Gulton Industries*, 53 F.3d 1270, 1277 (Fed. Cir. 1995).

Dayco Prod. v. Total Containment, 258 F.3d 1317, 1325, 1327-28 (Fed. Cir. 2001) also reflects the Federal Circuit's adherence to the principles of *McCarty*. In *Dayco*, the district court had construed the claim language to require the claims to include limitations based on the disclosure in the specification. The Federal Circuit disagreed, and stated: "[a]s we said in *Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998), 'while ... claims are to be interpreted in light of the specification and with a view to ascertaining the invention, *it does not follow that limitations from the specification may be read into the claims.*'" (*quoting Sjolund v. Musland*, 847 F.2d 1573, 1581, (Fed. Cir. 1988)" (Emphasis added). *Dayco*, 258 F. 3d at 1325.

The *Dayco* court noted that in each of the three claim constructions "the district court erroneously read a limitation into the claim language. Our cases make clear, however, that adding limitations to claims not required by the claim terms themselves, or unambiguously required by the specification or prosecution history, is impermissible." *See Laitram Corp. v. NEC Corp.*, 163 F.3d 1342, 1347 (Fed. Cir. 1998) ('a court may not import limitations from the written description into the claims'); *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121, (Fed. Cir. 1985) (*en banc*)." *Dayco*, 258 F.3d at 1327.

Interactive Gift Exp. v. Compuserve, Inc. 256 F.3d 1323 (Fed. Cir. 2001) further enunciated the Federal Circuit's adoption of the *McCarty* doctrine. In *Interactive Gift*, the Federal Circuit held that "that the district court erred in at least one aspect of its construction of each of the five claim limitations upon which the judgment of noninfringement was based." *Id.* at 1349. The court stated: "In construing claims, the analytical focus must begin and remain centered on the

language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point[ ] out and distinctly claim[ ] the subject matter which the patentee regards as his invention.' 35 U.S.C. § 112, ¶ 2." *Id.* at 1331.

The *Interactive Gift* court further stated: "[i]f the claim language is clear on its face, then our consideration of the rest of the intrinsic evidence is restricted to determining if a deviation from the clear language of the claims is specified." *Id.* at 1331. The Federal Circuit stated, "[a]lthough the preferred embodiment routes the authorization code with the use of an IMM code and electronic transmission, *these features are not recited in the independent claims and we are not at liberty to read them into the claims*". *Id.* at 1342 (Emphasis added) (*see also Turbocare Div., Demag Delaval v. General El.*, 264 F.3d 1111, 1123 (Fed. Cir. 2001)).

E. The Panel's Decision Failed To Apply The Guidelines Of The Precedent Set By This Court And The Precedent Of The Federal Circuit's Own Decisions

In rendering 35 U.S.C. § 112, ¶ 2 moot, the Panel misstated and misapplied this Court's precedents and the Federal Circuit's precedents. This statute mootness and precedential misapplication (i.e., that "the claims cannot be of broader scope than the invention that is set forth in the specification") permeates the entire *Decision* and results in erroneous claim construction as to all the claim terms in issue, which is then parlayed into an erroneous finding of noninfringement. The *Decision* not only constitutes a severe injustice to ODMC, it sets forth a flawed precedent that will misguide the Patent and Trademark Office, future trial courts, and litigants.

The correct application of this Court's precedent, 35 U.S.C. § 112 and the Federal Circuit's precedents, would construe the claims based on the ordinary and customary meaning of the words of the claims from the perspective of

one with ordinary skill in the art within the **context** of the specification, and would properly refrain from importing limitations from the specification into the claims absent a clear disavowal of the claim's scope. Further, a correct application of the *Phillips*' guidelines for claim construction would find sufficient evidence to support a finding of infringement.

The Panel systematically misstated and misapplied the *Phillips'* guidelines by declaring that the '**claims cannot be of broader scope than the invention that is set forth in the specification**." *On Demand Machine Corporation*, 992 F.3d at 1377 (Emphasis added). The Panel also erred when it stated "the scope and outer boundary of claims is set by the patentee's description of his invention." *Id.* (*citing Phillips*, 415 F.3d at 1313-14). The Panel's misapplications of *Phillips* led it to improperly import limitations from the specification into the claims and consequently to misconstrue the claim terms.

Here, the *Decision* renders all of the above irrelevant because now, the scope of the claims cannot be broader than the invention described in the specification. Moreover, in violation of constitutional authority, the *Decision* renders 35 U.S.C. § 112, ¶ 2 superfluous, for it is now the specification, not the claims, that determines the scope of the invention.

Claim 8 of the Ross patent is verbatim the same as original claims 14 and 15 filed July 27, 1990, except that in the phrase "providing means for a customer to scan . . . ," was rewritten to say "providing means for a customer to visually review. . . ." The parties agreed that these phrases had the same meaning. (See Dist. Ct. Docket #63, Joint Statement Of Claim Construction, Dec. 20, 2002, p. 4, Clause 4). It has long been held that an original claim is part of the applicant's disclosure. *In re Koller*, 613 F.2d 819, 823-24 (CCPA 1980). Since claim 8 is the same as original claims 14 and 15, claim 8 does not embrace more than the disclosure of the original specification.

Phillips recognized that "although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments." 415 F.3d at 1323. *Phillips* rejected the principle "that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." *Id.* *Phillips* recognized that persons of ordinary skill in the art "rarely would confine their definitions of terms to the exact representations depicted in the embodiments." *Id.*

To diverge from the plain and ordinary meaning of a claim term, the patent or file history must contain a "clear disavowal" of that meaning. *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1324-25, 1327 (Fed. Cir. 2002). *Sorensen v. ITC*, 427 F.3d 1375, 1378 (Fed. Cir. 2005), a post-*Phillips* case, stated ". . . in order to disavow claim scope, a patent applicant must clearly and unambiguously express surrender of subject matter during prosecution."

In view of the above holdings, the Panel's statement that "the claims cannot be of broader scope than the invention that is set forth in the specification" is in error. As stressed above, *Phillips* specifically stated that claim construction should not be limited to the embodiments disclosed in the specification. *Id.* at 1323-1324. (*See also Dayco*, 258 F.3d at 1327 ("Our cases make clear, however, that adding limitations to claims not required by the claim terms themselves, or unambiguously required by the specification or prosecution history, is impermissible.")). The Court in *Phillips* did not hold, as did the Panel, that "the claims cannot be of broader scope than the invention that is set forth in the specification." (*Decision* at App. A at 16a). Under *Phillips* and the overwhelming weight of case law and statutory authority, that is not the law.

As noted by the Panel, "the district court mostly applied the precedent whose correctness has been confirmed," and correctly viewed dictionary definitions "in a manner

consistent with their use in the intrinsic record." (*Decision* at App. A at 11a). However, the Panel changed the "ground rules" when it ruled that "the claims cannot be broader than the invention that is set forth in the specification." (*Decision* at App. A at 16a).

F. Post *Phillips*, There Is A Split In Decisions As To Whether Claims Are Construed To Have Their Ordinary Meaning, Or Can Be No Broader Than The Specification

1. Post *Phillips* Cases Wherein The Federal Circuit Has Held That The Claims Must Be Construed To Have Their Ordinary And Customary Meaning

After much anticipation from the patent bar, the Federal Circuit handed down its *en banc Phillips* decision in July 2005. With its multiple rulings with respect to the protected scope of the patent, a conflict of authority has arisen with respect to claim construction.

As noted, the *Phillips* case stated "It is a "bedrock principle" of patent law that "the claims of a patent define the invention to which the patentee is entitled the right to exclude." 415 F.3d at 1312. The Federal Circuit's post-*Phillips* precedential cases make clear that in "examining the specification for proper context, however, this court will not at any time import limitations from the specification into the claims. (citation omitted)." *CollegeNet, Inc. v. ApplyYourself, Inc.*, 418 F.3d 1225, 1231 (Fed. Cir. 2005) (Emphasis added).

The Federal Circuit has generally applied the *Phillips* guidelines that the claims must be construed to have their ordinary and customary meaning. For example, "the inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation." *Sorenson*, 427 F.3d at 1378 (*citing Phillips*, 415 F.3d at 1313.)

In another post *Phillips* ruling, the Federal Circuit held that the "words of a claim are generally to be accorded their 'ordinary and customary meaning,' . . . which is 'the meaning that term would have to a person of ordinary skill in the art in question at the time of invention.'" *Research Plastics, Inc. v. Federal Packaging Corp.*, 421 F.3d 1290, 1295 (Fed. Cir. 2005) (*citing Phillips*, 415 F.3d 1303).

In the *Collegenet* ruling the court held that the court "seeks a term's usage in the ordinary and customary meaning of the words amongst artisans of ordinary skill in the relevant art and at the time of the invention." *Collegenet*, 418 F.3d 1225, 1231. The *Collegenet* court further held that "[a] patent applicant may consistently and clearly use a term in a manner either more or less expansive than its general usage in the relevant community, and thus expand or limit the scope of the term in the context of the patent claims." *Id.* (*See Varco, L.P. v. Pason Systems USA Corp.*, 436 F.3d 1368, 1372-1373 (Fed. Cir. 2006)).

Still further, the Federal Circuit, post *Phillips*, held that "[a] court errs by importing the functions of a working device into the specific claims, rather than reading the claims for their meaning independent of any working embodiment." *JVW Enterprises, Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1331 (Fed. Cir. 2005) (*see also Biagro Western Sales, Inc. v. Grow More, Inc.*, 423 F.3d 1296, 1302 (Fed. Cir. 2005) ("words of a claim are generally given their ordinary and customary meaning.") (*citing Phillips*, 415 F.3d at 1312-1313)).

2. Post *Phillips* Cases Holding That A Claim Is Limited To The Embodiment Disclosed In The Specification

The *Decision*'s holding that "the claims cannot be of broader scope than the invention that is set forth in the specification" represents a split among the Federal Circuit's post *Phillips*' holdings. As noted, several Federal Circuit decisions following *Phillips* held that the claims must be

construed to have their ordinary and customary meaning. *Phillips*, 415 F.3d at 1312-1313.

In sharp contrast, there is also a new body of law, including the *Decision* that creates a conflict of authority with the post *Phillips* cases cited above. In addition to the instant *Decision*, the Federal Circuit affirmed a district court's ruling on claim construction that strictly limits the claim scope to the specification. *Honeywell Int'l., Inc. v. ITT Industries, Inc.*, 452 F.3d 1312 (Fed. Cir. 2006). In this ruling, the Federal Circuit limited the "invention" to a "fuel filter" wherein the claim at issue expressly claimed a "fuel system component." *Id.* at 1318 (*citing Phillips*, 425 F.3d at 1315) ("claims must be read in view of the specification, of which they are a part."). The Federal Circuit affirmed the limitation of the patent to only fuel filters since the specification remained silent to other components. *Id.*

Again, under this new body of law, the Federal Circuit held that "the specification and file history should guide a court toward an accepted claim construction." *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1348 (Fed. Cir. 2005)(*citing Phillips*, 415 F.3d 1303). In *Datamize*, the court held a patent indefinite limiting the definition of the claim term based on the specification. *Id.* at 1354-1356.

The Federal Circuit held that the specification "is the single best guide to the meaning of the disputed term." *Terlep v. The Brinkman Corp.*, 418 F.3d 1379, 1382 (Fed. Cir. 2005) (*quoting Phillips*, 415 F.3d 1303). In *Terlep*, the claim at issue recited a "clear plastic tubular holder" for an LED lamp. *Id.* at 1383. According to the court, the text of the claim recited "little guidance" on the meaning of the term "clear". *Id.* The *Terlep* court noted that the Background and the Summary sections of the patent described the invention as a lamp that does not have a lens cover. *Id.* The court noted "*[i]mplicit* in these passages is the distinction between lenses or holders that diffuse ... light and those that transmit light ..." *Id.* (Emphasis added). The court held that the

specification supported the district court's claim construction. *Id.* As such, the *Terlep* court limited the claims to the written description under an *implied* reasoning.

Although claims are examined and prosecuted in the Patent Office and claims are enforced by the courts, the Federal Circuit, under this new standard, does not see the claims as defining the invention. Instead, the Federal Circuit has elevated the specification to define the scope of protection for the invention. In other words, the patent's scope is defined and limited by the written description (i.e., 35 U.S.C. § 112, ¶ 1).

II. IN RENDERING 35 U.S.C. § 112, ¶ 2 MOOT, THE FEDERAL CIRCUIT HAS VIOLATED A CARDINAL PRINCIPLE OF STATUTORY CONSTRUCTION AS MANDATED BY CONGRESS AND THIS COURT THAT A STATUTE IS TO BE READ TO GIVE FORCE AND EFFECT TO ITS ENTIRETY

§ 112, ¶ 1 provides a "statutory directive that the inventor provide a 'full' and 'exact' description of the claimed invention .. ." ¶ 1 simply provides disclosure requirements for validity of a patent; i.e., a patent must meet the written description, enablement, and the best mode requirements of ¶ 1. A separate paragraph differentiates the claim from the specification. § 112, ¶ 2 mandates that "[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which *the applicant regards as his invention*." (Emphasis added). As clearly stated by the Federal Circuit, specification-centered claim construction makes ¶ 2 of § 112 superfluous. *Teleflex*, 299 F.3d at 1326. "If everything in the specification were required to be read into the claims, or if structural claims were to be limited to devices operated precisely as a specification-described embodiment is operated, there would be no need for claims." *Id.*

The history of § 112 reveals that description mandate of the invention under ¶ 1 is separate and distinct from the claiming requirement under ¶ 2. *Ending The Federal Circuit Crapshoot: Emphasizing Plain Meaning In Patent Claim Interpretation*, Research Foundation of Franklin Pierce Law Center, 42 IDEA 1, 3 (2002). From the statutory structure of § 112, it is manifest that the claim language carefully selected by the inventor defines the metes and bounds of the claimed invention. *Id.*

In 1952, Congress revised the Patent Act to emphasize the vital role played by a patent's claims. *Id.* Congress manifested the importance of the claims by separating the clause dealing with claims into its own paragraph and by modifying the language of that clause. *Id.* The clause stated: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." *Id.* That clause has remained unchanged for over fifty years and can still be found at 35 U.S.C. § 112 paragraph 2. *Id.* The property right granted by a patent is measured by, and limited to, the words of the claims. *Id.*

With respect to the distinct claiming requirement of § 112, ¶ 2, the *Decision* results in a violation of a "cardinal principle of statutory construction" that "a statute ought, upon the whole, to be so construed that, if it can be prevented, no clause, sentence, or word shall be superfluous, void or insignificant." *TRW, Inc. v. Andrews*, 524 U.S. 19, 31 (2001) (*quoting Duncan v. Walker*, 533 U.S. 167 (2001) ("reluctant to treat statutory terms as surplusage in any setting") (*See also United States v. Menasche*, 348 U.S. 528 (1955) ("it is our duty 'to give effect, if possible, to every clause and word of a statute."(*quoting Montclair v. Ramsdell*, 107 U.S. 147 (1883))). In adopting the *Decision*'s construction of § 112, the Panel has voided paragraph 2 of this statute.

As to 35 U.S.C. § 112, ¶ 2, the Federal Circuit held that

> "[i]f everything in the specification were required to be read into the claims, or if structural claims were to be limited to devices operated precisely as a specification-described embodiment is operated, *there would be no need for claims.* Nor could an applicant, regardless of the prior art, claim more broadly than that embodiment. *Nor would a basis remain for the statutory necessity* that an applicant conclude his specification with 'claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.'"

SRI International v. Matsushita Electric Corp., 775 F.2d 1107, 1121 (Fed. Cir. 1985) (*quoting* 35 U.S.C. § 112, ¶ 2) (Emphasis added) (*see also The Laitram Corp. v. NEC Corp.*, 163 F.3d 1342, 1347 (Fed. Cir. 1998). In following the *SRI* court, the *Teleflex* court added "specification-centered claim construction makes ¶ 2 of § 112 *superfluous.*" *Teleflex, Inc.*, 299 F.3d at 1326 (Emphasis added).

Because the Federal Circuit has almost exclusive jurisdiction over patent appeals, inconsistent decisions within the Federal Circuit is a source of troubling confusion as to the interpretation of the patent laws. The Panel's *Decision* calls for an exercise of this Court's supervisory power. The consistent approach to interpreting patent statutes is within the congressional mandate behind the Federal Circuit's creation. *See* Rochelle Cooper Dreyfuss, *The Federal Circuit: A case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1, 7-8 (1989); Wagner & Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1105, 1114-17.

There is an acute need for guidance from this Court on one of the most fundamental aspects of patent law, namely whether "the claims cannot be of broader scope than the

invention that is set forth in the specification", as held by the Panel. The Federal Circuit's *en banc* decision in *Phillips* clearly stated that 'although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments....(citations omitted) (claims may embrace 'different subject matter than is illustrated in the specific embodiments in the specification')." *Phillips*, 415 F.3d at, 1323. The *Decision* effectively overuless the above-quoted holding of *Phillips* and negates 35 U.S.C. § 112, ¶ 2.

III. THE APPLICATION OF THE CORRECT LEGAL STANDARDS SHOWS THAT THE PANEL'S CONSTRUCTION OF CLAIM 8 IS IN ERROR

Now we turn to the specific instances of the *Decision* that render 35 U.S.C 112 moot violating this Court's precedents and the Federal Circuit's precedents.

A. "Sales Information," Clauses [3] and [4] of Claim 8

Claim 8 only requires that "sales information" be stored in a computer and that it be visually reviewable by a customer, not that it be actually used to order a book. The jury instruction was as follows:

> The term "sales information" in Claim 8 is broader than promotional information and may include descriptive information which would aid in making a sale to the customer, such as the price of the book, Library of Congress notice, fly sheets, synopsis, plot outline, author's biographical summary, price, SKU and/or ISBN number.

The *Decision* misstated the *Phillips'* claim construction guidelines when it stated that "the scope and outer boundary of claims is set by the patentee's description of his invention". (*Decision*, App. A at 12a). However, the Ross patent clearly states that sales information includes both promotional information and descriptive information about the book, including the "ISBN number" (Federal Circuit Appendix 552,

11:3-9). There was no disavowal of this broad meaning of "sales information".

The Panel erred in stating that "[i]n finding infringement, the jury necessarily accepted ODMC's view [of sales information], for the orders to Lightning Source carry only identifying information, and Lightning Source provides no promotional information." (*Decision*, App. A at 12a). First, Claim 8 does not even mention "orders", or require that orders be based on sales information. Whether Lightning's orders "carry only identifying information" is thus irrelevant. Second, Lightning admitted that it provided promotional information to its customers via computer. Lightning's Chief Technology Officer testified that Lightning created "metadata" and made that "metadata" available via a computer to its customers. This metadata included information provided by the publishers, such as "the title of the book, the author of the book, the price of the book", "a synopsis", "a marketing image that might be available", and "the ISBN number." (Federal Circuit Appendix 6595, l.13–19). Once Lightning obtained this metadata, they "clean it up", "standardize it", and it "goes on the content distribution hub [a computer]" and it is placed in a computer "catalog". (Federal Circuit Appendix 6596, l.2 – 6598, l.5). This clearly shows that Lightning did store "sales information" on a computer, and that Lightning's "sales information" included "promotional information" and "descriptive information" about the books.

At App. A p. 13a of the *Decision*, the Panel incorrectly found that "ODMC disavowed this interpretation in order to obtain the patent, and represented to the patent examiner that the inclusion of promotional material is what distinguishes this invention from the prior art." In the reexamination, ODMC distinguished prior art, computer systems that identified documents by a non-descriptive computer file name from "sales information." ODMC argued that contrary to the assertion "that the 'file name' of the documents used with

the *Interpress* language constitutes 'sales information' within the scope of the '213 patent (see Column 6, lines 18 – 21 of the '213 patent), **it is pointed out that there is no disclosure of the sales information or descriptive information.**" (Federal Circuit Appendix 8328)(Emphasis added).

Thus, contrary to the Panel's finding that ODMC disavowed descriptive information from "sales information", ODMC expressly argued that "sales information" included descriptive information. The specification of the Ross patent expressly describes sales information to be both "promotional" and "descriptive information" (Federal Circuit Appendix 547, 2:3-6; 549, 6:18 – 21; 550, 7:44 – 45). Moreover, the specification expressly refers to the "ISBN number and other information (as shown in Fig. 5) which help to **describe** the book and to provide the potential customer [with information] about the book." (Federal Circuit Appendix 552, 11: 6 – 10)(Emphasis added).

Accordingly, the Panel incorrectly concluded that "on the correct construction of 'sales information' claim clauses [3] and [4] cannot be met by Lightning's activities, for it was not disputed that the books ordered from Lightning Source were ordered solely upon identifying data such as title or ISBN, without promotional information from Lightning Source." (*Decision*, App. A at 14a). There is no requirement in Claim 8 that "sales information" must be used to order a book, but only that sales information be stored on a computer and that that means be provided for a customer to visually review the sales information. As stated above, Lightning provided promotional and descriptive sales information (e.g., "metadata") about its books to its customers.

The Panel ignored the holding of *Sorensen*, that "in order to disavow claim scope, a patent applicant must clearly and unambiguously express surrender of subject matter during prosecution." 427 F.3d at 1378. The comment regarding the file name referenced by the Panel was far short of a disavowal

of claim scope but part of "ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation", which *Phillips* characterized "lacks the clarity of the specification and thus is less useful for claim construction purposes." 415 F. 3d at 1317.

Moreover, even if the Panel correctly construed "sales information" and limited the term to promotional information, Defendant Amazon.com clearly met this limitation.

B. "Customer" Clauses [4] and [5] of Claim 8

For clause [4] and [5] of claim 8, the district court instructed the jury: "The word 'customer' is 'one who buys goods or services' and, is not limited to a retail customer."

"Customer" is not a technical term – it is commonly known not only to those skilled in the art, but also to the pedestrian on the street. The Panel, however, limited the definition to a "retail customer", absent explicit disavowal of the ordinary meaning of "customer". (*Decision*, App. A at 15a & 16a). However, for such disavowal, an applicant must clearly and unambiguously expressly surrender such during prosecution. *Sorenson*, 427 F.3d at 1378. ODMC did not disavow the plain and ordinary meaning of the term "customer", either in the Ross specification or in the prosecution history. In fact, the Ross specification expressly discloses that the bookstore clerk may order the book (Federal Circuit Appendix 553, 13:11 – 19), and also states that "[t]his invention relates to the field of book distribution, storage, manufacturing and retailing." (Federal Circuit Appendix 547, 1:12-13). The specification discloses the patented method's use in mail order catalogue operations to reduce inventory, book storage, and other concerns. (Federal Circuit Appendix A 548, 3:16 – 24). This all contradicts a holding that "customer" should be limited to a person who selects, purchases, and initiates manufacture of a book for personal use.

C. "Providing Means for a Customer to Visually Review," Clause [4], Claim 8

The district court correctly viewed this claim clause to be a means-plus-function limitation, 35 U.S.C. § 112(6). The trial court instructed the jury that: "Claim 8, clause 4, recites: '*providing means for a customer to visually review said sales information.*' The word 'providing' in this clause has its usual and customary meaning, including to supply for use, contribute, or furnish." (Federal Circuit Appendix A 134).

The Panel ruled that the "infringement issue as to this clause ... is not whether the computer contains a touch screen, but whether the defendants 'provide' a computer means to customers." (*Decision* at App. A at 18a). The Panel thus confined the claim to the specification and negated the jury's verdict of joint infringement.

No reason exists why Claim 8 precludes a customer from furnishing his (her) own computer and monitor to view sales information that Defendants have made available on their web sites and have encouraged their customers to view via the customer's computers. *Catalina* rejected the Panel's reasoning in an environment wherein the accused infringer used "a web-based coupon system to monitor and control the distribution of coupons from its www.coolsavings.com website," in which the customer furnishes his computer and printer to print the accused infringer's coupons. *Catalina Marketing International, Inc. v. Coolsavings.com, Inc*, 289 F.3d 801, 806 (Fed. Cir. 2002). The "[u]sers may access the Coolsavings system from any Internet-accessible computer by simply logging onto the coolsavings.com website." *Id.* at 807-808. Thus, under the plain meaning of Claim 8, the customer can provide himself with a computer.

D. "Printing on Paper Pages," Clause [7] of Claim 8

As to clause [7], the district court instructed: "The term 'paper pages' does not require the text to be printed on sheets of paper, as opposed to being printed on continuous rolls or

any other of a variety of forms of paper, although the book which is produced by the process must be comprised of pages as opposed to rolls." The trial court correctly observed that "[n]either the claims nor the specification references the form of paper used in the invention, although the claims and the specification disclose that ultimately pages of a book are produced." (App. D at 88a).

The Panel incorrectly ruled that the specification describes the invention only as printing on individual pages, not a "factory setting" with the production of multiple copies. (*Decision*, App. A at 21a). This astonishing result occurred even though Lightning offered into evidence its video of its process (Federal Circuit App. A 9459), which shows a flow chart (Federal Circuit App. A 9460) that admitted: "Step 3 – Batch Order is sent to a printer, **pages** are printed." Lightning added the additional step of first printing the text on a web and then cutting pages from the web. Moreover, there can be no doubt upon looking at a book printed by Lightning that Lightning performed the step of "printing the text of said selected one of said books on paper pages." Because Claim 8 states "comprising the steps of:", one cannot avoid infringement by adding steps such as printing the text on webs of paper and then cutting the pages from the webs. *See Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 1271 (Fed. Cir. 1986).

E. The Preamble

The district court's *Markman* order found that the preamble was not a limitation. (App. D at 49a & 50a). The Panel improperly imported a temporal limitation from the specification into the preamble by requiring the preamble to "embrace[s] the totality of these limitations," namely that "upon customer review of the stored sales information, promptly printing and binding the single copy in response to the customer's selection." (*Decision*, App. A at 23a & 24a). No fair reading of the preamble would give one of ordinary skill a clue of any temporal limitation.

The Panel's preamble construction improperly limits the method to printing one and only one copy of a book. Lightning has repeatedly admitted it prints one book at a time, as shown on its web site, which touts "In one week, we craft 70,000+ books, *one at a time.*"; "We Help You Succeed – One Book At A Time"; "10 Million Books – One At A Time – 1997 – 2003". (Federal Circuit App. A 9694).

IV. THIS CASE IS A GOOD VEHICLE FOR RESOLVING THE QUESTION PRESENTED

This case presents a ripe development of the questions presented without other defenses obscuring analysis of the points raised. The district court developed the issues via its thorough and erudite 46 (forty-six) page *Markman* order. (App. D) The *Markman* order elaborately explained the district court's claim construction determinations, with extensive reference to the specification and to the background for ascertaining the claim construction. The district court did this against the background of extensive briefing and lengthy claim construction hearing.

The record is further crisp for review in that but a single claim is at issue. It is the same as the claim that was initially submitted with the original patent application. This claim does not recite highly technical terms and does not involve convoluted prosecution. Moreover the Appellants did not appeal the jury's finding that the patent was not invalid. Hence, Appellants can advance no arguments that the claim is hindered by lack of an enabling disclosure, or an unsatisfactory written description, of the invention under 35 U.S.C. § 112.

The Ross patent involves disruptive technology that is transforming the publishing and bookselling industries. Protection of the inventions of our citizens in this field is vital to our nation's economic prosperity.

Frustration of being granted the fair scope of one's invention by "specification-hugging" claim construction

strangles motivation and incentive to invent. An answer to the claim construction straight jacket of the *Decision* (App. A) must be rendered now to restore Congress' intent when it enacted § 112, ¶ 2.

CONCLUSION

For the above stated reasons, ODMC respectfully urges that its petition for writ of certiorari be granted.

Respectfully submitted,

WILLIAM B. CUNNINGHAM
Counsel of Record
MCPHERSON D. MOORE
POLSTER, LIEDER,
WOODRUFF & LUCCHESI
12412 Powerscourt Drive
Suite 200
St. Louis, Missouri 63131
(314) 238-2400

DAVID B. B. HELFREY
HELFREY, SIMON & JONES
120 South Central Avenue
St. Louis, Missouri 63105
(314) 725-9100

Attorneys for Petitioner

APPENDIX

APPENDIX A — OPINION OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT DECIDED MARCH 31, 2006

UNITED STATES COURT OF APPEALS, FEDERAL CIRCUIT

05-1074, 05-1075, 05-1100

ON DEMAND MACHINE CORPORATION,

Plaintiff-Cross Appellant,

v.

INGRAM INDUSTRIES, INC. and LIGHTNING SOURCE, INC.,

Defendants-Appellants,

and

AMAZON.COM, INC.,

Defendant-Appellant.

DECIDED: March 31, 2006.
Rehearing En Banc Denied June 20, 2006.

Before NEWMAN, MAYER, and BRYSON, Circuit Judges.

NEWMAN, Circuit Judge.

Ingram Industries, Inc., Lightning Source, Inc., and Amazon.com, Inc. (collectively the defendants) appeal the

judgment of the United States District Court for the Eastern District of Missouri,[1] holding them liable for infringement of United States Patent No. 5,465,213 (the Ross patent) owned by On Demand Machine Corporation (ODMC). We conclude that the jury verdict of infringement was based on a partly incorrect claim construction, and that on the correct construction a reasonable jury could not find the patent to be infringed. Accordingly, the judgment of infringement is reversed and the damages award vacated. The grant of a royalty-bearing license during appeal is vacated, and the issues raised by cross-appeal are moot.

BACKGROUND

The Ross patent is for a "System and Method of Manufacturing a Single Book Copy," wherein a single copy of a book is printed and bound, generally at the site of sale, upon provision to the customer of computerized information about the book. According to the Ross patent, a retail seller of books provides a computer console for customer use, wherein the computer stores promotional and other information such as book reviews and price, and also stores the complete text of the book and the design of its cover. The customer can browse through the stored information, inspect the text, and select a book for purchase; the book is then printed and bound, preferably at the same site. The

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1. *On Demand Machine Corp. v. Ingram Indus., Inc.*, No. 4:01 cv1668MLM (E.D.Mo. Oct. 28, 2004) (*judgment*); July 23, 2004 (*order denying enhancement of damages*); July 5, 2003 (*claim construction order*).

patent's Summary of the Invention describes the system as follows:

> A customer module (e.g. a customer kiosk) permits the consumer to access the promotional sales information on a display screen which may include general information such as a list of best sellers or specific information (e.g. a sample chapter) about individual books in which the consumer may have some interest. Such promotional sales information may include a graphical simulation of the book, descriptive information provided by the publisher, as well as a synopsis and critique of the book by a book reviewer presented in full motion video and stereo sound. The consumer may browse though the introduction, abstracts or selected pages of the book on the computer module screen.
>
> . . .
>
> It is therefore an object of the invention to provide a book manufacturing system which is capable of storing data corresponding to the text and color graphical cover of tens of thousands of different books, as well as promotional sales text and color graphics for aiding the consumer in choosing a book for purchase, and facilitate the high speed manufacture of a single copy of a selected book on the immediate premises while the customer waits for a very short time.

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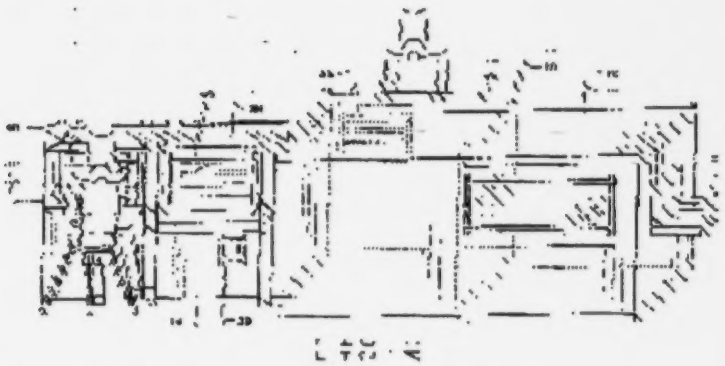
Col. 1, line 63-col. 2, line 8; col. 3, lines 7-14. The patent explains the advantages of providing promotional information to the customer, along with immediate production and delivery of the selected book. Patent Figure 2 shows a sales kiosk with the customer at the computer, and adjacent printing/binding equipment:



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Defendant Lightning Source is a book printing company with a factory in LaVergne, Tennessee, and defendant Ingram Industries is the corporate parent of Lightning Source. Lightning Source prints and sells books as ordered by publishers, wholesalers, and retailers such as Amazon.com, but does not sell directly to the public. Purchasers may order books from Lightning Source through its website or by electronic data interchange (EDI), identifying the book by its title and author or ISBN (International Standard Book Number). Lightning Source usually prints books in batches, often as large as several hundred books, but may also print single copies if ordered. Lightning Source testified that the turn-around time from order until delivery ranges from one to fifteen days. Defendant Amazon.com is a seller of books and other products to the public on the internet: its internet website provides promotional and sales information on individual books, and receives orders from customers. Amazon.com does not print books, but may order single or multiple copies from Lightning Source to fill orders from the public.

While the Ross patent application was pending, Mr. Ross offered to license his invention to Ingram Industries, a commercial printer. They entered into a one-year confidentiality agreement beginning in February 1995, and Mr. Ross disclosed his patent application and business plans to Ingram. The Ross patent issued on November 7, 1995. Ingram sought the advice of counsel, who advised that Ingram could practice on-demand printing in a non-infringing manner. In September 1996 Ingram informed Mr. Ross that Ingram was not interested in obtaining a license. Ingram then created a subsidiary company, Lightning Source, to print books to order for resellers but not for the general public.

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In 1997 ODMC requested reexamination of the Ross patent, citing several additional references. Claims 7 and 8 were duly confirmed by the Patent and Trademark Office, and are as follows (with bracketed numbers as added by the district court):

> 7. A method of high speed manufacture of a single copy of a book comprising the steps of: [2] storing the text of a plurality of books in a computer, [3] storing a plurality of covers for books to be printed in said computer, said *1336 covers being stored in a bit mapped format, [4] storing sales information relating to said plurality of books in a computer, [5] providing means for a customer to scan said sales information, [6] enabling the customer to select which book or a portion of a plurality of books, [7] commanding a computer to print the text of said selected books and a cover in response to said selection, [8] retrieving the text of said selected books from a computer, [9] printing the text of said selected books on paper pages, and [10] binding said paper pages together to form said selected one of said books.

Claim 8 is similar, but varies in the clauses relating to the book cover:

> 8. A method of high speed manufacture of a single copy of a book comprising the steps of: [2] storing the text of a plurality of books in a computer, [3] storing sales information relating

> to said plurality of books in a computer, [4] providing means for a customer to visually review said sales information, [5] commanding a computer to print the text of a selected one of said books in response to a customer's selection, [6] retrieving the text of said selected one of said books from a computer, [7] printing the text of said selected one of said books on paper pages, [8] binding said paper pages together to form said selected one of said books, [9] storing graphical information corresponding to the cover of each of said books, [10] commanding a computer to reproduce said graphical information on a book cover, and [11] binding said paper pages together with said cover therearound.

After the reexamination Mr. Ross informed Ingram that Lightning Source was infringing the Ross patent and again offered a license. Ingram and Lightning Source again sought the opinion of counsel, who advised that "the printing of books in accordance with the flow diagram of Exhibit A by Ingram, would not constitute infringement of the claims of the Ross patent." (Opinion Letter of Sept. 20, 1996). Counsel also advised that infringement would not be found if the claims were limited to the embodiment shown in the specification, but cautioned that if a trier of fact were to look at the claim language in isolation from the specification and the embodiment described therein, infringement might be found, although such broad claims would be of questionable validity in view of the prior art. Opinion letter of November 19, 1998 ("To be at risk, the claims would have to be interpreted very broadly and a broad interpretation of the

claims could well invalidate them.") Lightning Source sought the opinion of other counsel, who were of similar view. Ingram and Lightning Source then declined the proffered license.

ODMC filed suit against Ingram Industries, Lightning Source, and Amazon.com, alleging infringement of claims 7 and 8 and that the infringement was willful. The district court held a *Markman* hearing and construed various claim terms, and instructed the jury accordingly. The jury returned a verdict of infringement, and awarded $15,000,000 in compensatory damages. The jury also found the infringement to be willful, but the court denied ODMC's request for enhanced damages and attorney fees, explaining that this was "an extremely close case." On this appeal the defendants challenge the district court's construction of several claim terms, dispute various jury instructions, and argue that a reasonable jury could not have found infringement on the correct claim construction. They also state that the damages award was excessive or speculative.

The district court rejected ODMC's request for an immediate injunction, and authorized continuing operation by the defendants through the conclusion of all appellate and post-appellate proceedings at a royalty rate of 12.64425% of Lightning Source's revenues for operations covered by the patent. ODMC describes this remedy as a compulsory license and argues that it was improperly granted, citing the general rule that a patentee has the right to an injunction. This is the subject of ODMC's cross-appeal.

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DISCUSSION

Claim construction is a matter of law, and receives plenary review on appeal. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 978 (Fed.Cir.1995), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996); *see Cybor Corp. v. FAS Technologies, Inc.*, 138 F.3d 1448, 1456 (Fed.Cir.1998) (*en banc*). The reviewing court determines whether a reasonable jury, on correct instruction of law, could reasonably have reached the verdict reached by this jury; that is, was there substantial evidence in support of the verdict, when disputed questions of fact and factual inferences are resolved in favor of the party that received the verdict. *See, e.g., Richardson v. Suzuki Motor Co., Ltd.*, 868 F.2d 1226, 1235 (Fed.Cir.1989).

A jury instruction based on incorrect law, such as an erroneous claim construction that may have affected the verdict, receives *de novo* review. An erroneous jury instruction may warrant a new trial, *see Ecolab Inc. v. Paraclipse, Inc.*, 285 F.3d 1362, 1373 (Fed.Cir.2002), or the court may consider whether, on the correct instruction, the jury could have reached only one verdict. *See, e.g., Cybor*, 138 F.3d at 1454. The court's award of a royalty-bearing license during appeal and refusal to issue an immediate injunction are reviewed on the standard of abuse of discretion.

Appendix A

I

Claim Construction

The district court held a *Markman* hearing and construed the disputed terms of the claims. Only claim 8 was presented for jury verdict, and the claim terms are reviewed in that context.

These claim construction proceedings took place in 2002-03, at a time when conflicting Federal Circuit panel opinions were producing uncertainty as to the law of claim construction. *See Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed.Cir.2005) (*en banc*) (clarifying the law and resolving conflicts in claim construction). This court in *Phillips* emphasized that the proper judicial construction of a claim and its terms is from the viewpoint of a person of ordinary skill in the field of the invention; the court must determine how such a person would understand the claim in the context of the particular technology and the description in the specification, with due reference to the prosecution history. Thus the court in *Phillips*, resolving conflict, stressed the dominance of the specification in understanding the scope and defining the limits of the terms used in the claim. 415 F.3d at 1313.

1. "Sales Information," Clauses [3] and [4] of Claim 8

Although this case was tried before *Phillips* was decided, the district court mostly applied the precedent whose correctness has been confirmed. For example, although the district court approached the construction of "sales

information" in claim clauses [3] and [4] by reciting general dictionary definitions, as follows:

> The word "sales" is an adjective modifying the word "information." The dictionary definition of "information" is "1. knowledge derived from study, experience, or instruction; ... 5. a non accidental signal used as an input to a computer or communication system." [citing several dictionaries],

the court held, correctly, that "these multiple dictionary definitions of 'information' and 'sales' should be construed in a manner which is consistent with their use in the intrinsic record." The district court then defined "sales information" as "data stored in a computer which is involved in the promoting and selling of a book," and that the term is not limited to promotional information, but includes descriptive information as well, such as price. The jury instruction was as follows:

> The term "sales information" in Claim 8 is broader than promotional information and may include descriptive information which would aid in making a sale to the customer, such as the price of the book, Library of Congress notice, fly sheets, synopsis, plot outline, author's biographical summary, price, SKU and/or ISBN number.

The defendants argue that the district court construed and instructed the jury on "sales information" too broadly. They argue that the patent specification and prosecution

history require that "sales information" always includes information that is promotional in nature, and that the term is not met by the provision of only price and identifying information such as title or ISBN. ODMC responds that the claims are not limited to the embodiment illustrated in the specification, and that "sales information" is infringed even when there is no promotional information included with the identifying information. In finding infringement the jury necessarily accepted the ODMC view, for the orders to Lightning Source carry only identifying information, and Lightning Source provides no promotional information.

In general, the scope and outer boundary of claims is set by the patentee's description of his invention. *Phillips*, 415 F.3d at 1313-14. The specification makes clear that sales information is that which would help the consumer to choose a book. We agree with the defendants that the prosecution history requires this claim construction, for the inclusion of promotional information was a material distinction from the prior art. Mr. Ross stressed that in his invention a customer can browse among books based on information concerning the substantive content of the book. The specification identifies "descriptive material such as a synopsis, plot outline, author's biographical summary, etc." as promotional information. Col. 6, lines 18-21. ODMC stressed this distinction from the prior art on reexamination:

> It is submitted that in no way is a job file descriptor to be confused with means for allowing a customer to browse among a multiplicity of books stored on Patent Owner's system and to select the book of interest for on-demand printing and delivery to the customer.

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The reexamination examiner agreed, stating as the ground of patentability that:

> The prior art does not disclose or suggest the storing of sales information for customer review which provides descriptive information relating to stored books in a computer in combination with the customer selection of books or portions of books, ...

ODMC states that the term "sales information" is met by identifying information such as title or ISBN alone, for the specification states that the computer stores a "Book Attributes Description" and lists eleven attributes that "include the title of the book, its ISBN number and other information (as shown in FIG. 5) which help to describe the book and to provide the potential customer [with information] about the book." Col. 11, lines 3-9. ODMC argues that the ISBN is sufficient sales information, and that this claim term is met whether or not promotional material such as book reviews are also made available to customers. ODMC argues that the jury necessarily so found, in finding infringement.

The defendants argue that ODMC disavowed this interpretation in order to obtain the patent, and represented to the patent examiner that the inclusion of promotional material is what distinguishes this invention from the prior art. We agree with the defendants that "sales information" requires that promotional information is stored in the computer that is made available to the customer. The ISBN or the title and author are file identifiers, not promotional information. The jury instruction, if read to mean that

identifying information alone can satisfy the "sales information" term, is incorrect.

We conclude that on the correct construction of "sales information," claim clauses [3] and [4] cannot be met by Lightning Source's activities, for it was not disputed that the books ordered from Lightning Source were ordered solely upon identifying data such as title or ISBN, without promotional information from Lightning Source. ODMC argues that Amazon.com provides sales information, producing joint infringement as to the 10% of Lightning Source's production that is ordered by Amazon. We discuss this aspect in Part II, *infra.*

2. "Customer," Clauses [4] and [5] of Claim 8

The district court construed "customer" to mean anyone "who buys goods or services," and that the "customer" does not have to be an individual consumer or a retail customer. The court rejected the defendants' argument that the Ross patent is limited to "direct retail customer sales," and instructed the jury as follows:

> The word "customer" is "one who buys goods or services" and, is not limited to a retail customer.

The defendants argue that this claim interpretation is broader than the specification allows, and that the entire focus of the Ross patented invention is that the "customer" is the person who orders and immediately receives the printed-to-order book, the ultimate consumer. The defendants point out that their orders come only from resellers, not from individual

purchasers, and that printing is at a remote factory, not at the customer's site. They point out that the Ross specification describes the customer as a consumer who, upon choosing a book, sets in motion the "high speed manufacture of a single copy of a selected book on the immediate premises while the customer waits for a very short time." Col. 3, lines 7-15. The defendants argue that the district court, in refusing to include this limitation of "customer" in its *Markman* definition and jury instruction, placed too much weight on a dictionary definition of "customer" that is out of context.

ODMC argues that the patentee did not disavow the standard dictionary meaning of "customer," and that the Ross invention is not limited to any specific kind of customer. However, when the scope of the invention is clearly stated in the specification, and is described as the advantage and distinction of the invention, it is not necessary to disavow explicitly a different scope. *See Astrazeneca AB v. Mut. Pharm. Co.*, 384 F.3d 1333, 1339-40 (Fed.Cir.2004) ("Where the general summary or description of the invention describes a feature of the invention (here, micelles formed by the solubilizer) and criticizes other products (here, other solubilizers, including co-solvents) that lack that same feature, this operates as a clear disavowal of these other products"); *Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc.*, 262 F.3d 1258, 1268-69, 1271 (Fed.Cir.2001) "the written description 'can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if the guidance is not provided in explicit definitional format.' " (quoting *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1344 (Fed.Cir.2001)).

The Ross specification repeatedly reinforces its usage of the term "customer" as the retail consumer. *See* col. 7, lines 24-25 ("All customer actions are conducted within customer console 103"); col. 15, lines 59-60 ("the customer seats himself or herself in front of computer screen 157" as depicted in Fig. 2); col. 2, lines 8-12 ("if the consumer wishes to purchase a book, he may either pay for the book through a store clerk . . . or the consumer may enter his credit card into the system"). The specification distinguishes "general purpose machines . . . not specifically designed to be consumer operated for the on demand, automatic manufacturing of a single book at the point of sale." Col. 10, lines 37-43.

In *Phillips,* 415 F.3d at 1321, the *en banc* court explained that the role of the specification is to describe and enable the invention. In turn, the claims cannot be of broader scope than the invention that is set forth in the specification. Although we agree with the district court that the Ross invention does not concern itself with whether the "customer" reads the book or obtains it for resale, the focus of the Ross patent is immediate single-copy printing and binding initiated by the customer and conducted at the customer's site. The district court's definition of "customer" cannot eliminate these constraints in order to embrace the remote large-scale production of books for publishers and retailers.

3. *"Providing Means for a Customer to Visually Review," Clause [4] of Claim 8*

The district court correctly viewed claim clause [4], "providing means for a customer to visually review said sales

information," to be in means-plus-function form pursuant to 35 U.S.C. § 112(6),[2] and instructed that the customer-operated computer module is the corresponding structure shown in the specification. The jury was instructed as follows:

> Claim 8, clause 4, recites: " *providing means for a customer to visually review said sales information.*" The word "providing" in this clause has its usual and customary meaning, including to supply for use, contribute, or furnish.
>
> The phrase "means for a customer to scan said sales information" in this clause [the words of claim 7] is interpreted to include a customer computer module, as described in Column 13, lines 54-67 and Column 14, lines 1-9, but does not include elements in the patent specification, which are referred to as being preferable, and thus a customer seat and ambient light are not included. Because this claim language concerns a means plus a function, the words "means for a customer to scan said sales information" include equivalents of a customer computer module which has the identical function permitting a customer to visually review the sales information which has

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2. Section 112(6). An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

> been stored in a computer. Such equivalents include any computer monitor that gives a customer access to sales information that has been stored in a computer and any user input device for a customer to perform this function. These include accessing information by touching the computer screen or by use of structure that is equivalent thereof.

The defendants argue that the district court improperly invaded the province of the jury when it announced the equivalents that are "included," stating that it is the role of the trier of fact, here the jury, to determine equivalents under 35 U.S.C. § 112(6). *See Utah Med. Prods., Inc. v. Graphic Controls Corp.*, 350 F.3d 1376, 1383 (Fed.Cir.2003) (equivalents under § 112(6) is a question of fact); *Odetics, Inc. v. Storage Tech. Corp.*, 185 F.3d 1259, 1268 (Fed.Cir.1999) (comparing overall structures corresponding to the claimed function).

ODMC states that it was not incorrect for the district court, in the context of claim construction, to instruct the jury as to possible equivalents of the computer monitor and how the customer accesses the sales information. Although equivalents do not lose their factual identity in a means-plus-function context, in the uncertain boundary between law and fact in claim construction, the giving of an instruction that is not incorrect factually is not reversible error. The infringement issue as to this clause, as the district court's instruction implemented, is not whether the computer contains a touch screen, but whether the defendants "provide" a computer means to customers. *See Acromed Corp. v.*

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Sofamor Danek Group, Inc., 253 F.3d 1371, 1382 (Fed.Cir.2001) (limitations on the structure for means plus function claims must relate to the function at issue).

It is undisputed that these defendants do not provide a computer to the customer. ODMC states that the defendants provide themselves with computers and that Amazon.com provides sales information that a customer can access through any computer. However, this is not the Ross invention, which requires that the bookseller "provides" the customer with the computer for use in this unified browsing/ordering/ printing system. Although a witness for ODMC testified to his belief that the defendants encourage retail booksellers to provide computers for customer use, there was no evidence of such booksellers providing a computer system whereby the ultimate customer can initiate printing and binding of a selected book from data that had been entered into the computer.

Amazon states that while it provides computer-accessible information about books, including promotional information, it does not provide computers or computer kiosks. Consumers use their own computers to order books from Amazon, which in turn may place orders with Lightning Source. However, the consumer cannot order that the book be printed. As summarized by the district court:

> Evidence at trial established that the books printed by Lightning Source are the result of various types of "demands": wholesalers use computer-ordering systems that do not involve any viewing of sales information available on any web site; two

> retailers order books in a similar manner; some publishers order books by EDI (Electronic Data Interchange) transactions where there is no use of any web site; other publishers order books by placing orders through the Lightning Source web site, but that ordering process requires no viewing of sales information; retail customers may order Lightning Source-printed books through Amazon's web site by reviewing sales information, but the books may have already been printed as a result of an Amazon order to Lightning Source.

Order of July 23, 2004, at 13. The evidence summarized by the district court was undisputed: Publishers, wholesalers, and retailers, order books from Lightning Source in various ways, but there is not direct ordering by retail customers.

4. "Printing on Paper Pages," Clause [7] of Claim 8

It was undisputed at trial that Lightning Source prints on rolls or webs of paper rather than on pre-cut sheets. The district court ruled that "printing the text of said selected one of said books on paper pages" of clause [7] does not mean that the book must be printed on previously separated pages; that is, the printing can be on long webs or continuous rolls and then cut into pages. This resulted in the following jury instruction:

> This clause requires the printing of one or more books. The term "paper pages" does not require the text to be printed on sheets of paper, as

> opposed to being printed on continuous rolls or any other of a variety of forms of paper, although the book which is produced by the process must be comprised of pages as opposed to rolls.

The defendants argue that this interpretation and instruction are incorrect, and that the claim requirement that the book be printed "on paper pages" means that the paper is in the form of pages when printed, rather than being cut into pages after printing. The defendants stress that the Ross patent is for an immediate-production automatic printing process, and not one that requires commercial-scale equipment for paper-cutting after printing.

The specification states that the patented invention is the printing of individual copies of books at the customer site rather than in a "factory setting," col. 1, lines 13-19, and illustrates a "page printer 26," which prints a "stack of paper text pages," col. 8, lines 22-40, showing page-size paper. The specification describes the Ross invention only as printing on individual pages, as distinguished from a "factory setting" and the production of multiple copies. The Ross invention, and the claims, are directed to the on-site printing and binding of a single copy, for which printing on large webs and the requirement of cutting to page size would require equipment and procedures inimical to the substance of the Ross invention.

We conclude that the district court erred in construction of this clause. When this clause is correctly construed, no reasonable jury could find that it reads on a process of printing on large sheets or webs of paper that require the further processing step of cutting into pages after printing.

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5. The Preamble

The district court held that the preamble phrase "high speed manufacture of a single copy of a book" does not limit the claim to immediate printing or require that only one copy be printed, and instructed the jury that:

> The phrase "high speed manufacture" in the preamble does not limit the claim to require that all other steps, such as a customer's scanning sales information, selecting a book, and then printing and binding a book must take place within a short period of time. The preamble also does not limit the claim to the manufacture of a "single copy" of a book, as opposed to manufacturing several or multiple copies .... and does not require that the book be bound with a cover.

The defendants argue that this instruction is incorrect, and that the preamble explicitly limits the claim, in that it states the invention to which the claim is directed. They also point out that clauses [9], [10], and [11] require a cover.

In considering whether a preamble limits a claim, the preamble is analyzed to ascertain whether it states a necessary and defining aspect of the invention, or is simply an introduction to the general field of the claim. In *Kropa v. Robie*, 38 C.C.P.A. 858, 187 F.2d 150, 152 (1951), the court aptly described the inquiry as whether the preamble is "necessary to give life, meaning and vitality to the claims or counts." *See, e.g., Poly-America, L.P. v. GSE Lining Tech., Inc.*, 383 F.3d 1303, 1309-10 (Fed.Cir.2004) (the

specification described the "blown-film" as a fundamental characteristic of the invention, and its use in the preamble limited the claims); *In re Cruciferous Sprout Litigation*, 301 F.3d 1343, 1347-48 (Fed.Cir.2002) (the preamble phrase "rich in glucosinolates" was limiting because the patentee relied on the preamble to distinguish the prior art in prosecution); *General Elec. Co. v. Nintendo Co., Ltd.*, 179 F.3d 1350, 1361-62 (Fed.Cir.1999) (where the specification made clear that the invention was a mode of display of binary data on a raster scanned display device rather than all display devices, the preamble language "displaying a pattern on a raster scanned display device by mapping bits" was a claim limitation).

The preamble serves to focus the reader on the invention that is being claimed. We conclude that the preamble in this case necessarily limits the claims, in that it states the framework of the invention, whose purpose is rapid single-copy printing of a customer's selected book as stated in clauses [5], [6], [7], and [8]. The high speed manufacture of a single copy is fundamental to the Ross invention, for the specification highlights that the customer may have a printed and bound copy within "three to five minutes." Col. 2, line 33. While ODMC points out that Lightning Source's web site touts "In one week, we craft 70,000+ books, one at a time," such mass production is not the invention described and claimed by Ross.

The district court's instruction that the preamble in this case does not limit the claim was incorrect, for the entirety of the claim implements the preamble's high speed manufacture of a single copy, upon customer review of the stored sales information, promptly printing and binding the

single copy in response to the customer's selection. The preamble embraces the totality of these limitations, and limits the claim to the subject matter of the preamble.

II

Conclusion

The parties disputed most of the claim terms. Although we agree with the district court that each term standing alone can be construed as having varying degrees of breadth, each term must be construed to implement the invention described in the specification. *See Phillips,* 415 F.3d at 1316 (Fed.Cir.2005) ("The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction."); *Autogiro Co. of Am. v. United States,* 181 Ct.Cl. 55, 384 F.2d 391, 397-98 (1967) ("use of the specification as a concordance for the claim . . . is a basic concept of patent law"). Care must be taken lest word-by-word definition, removed from the context of the invention, leads to an overall result that departs significantly from the patented invention.

The defendants argue that no reasonable jury could have found that defendants infringe claim 8 on application of the correct claim construction. Lightning Source stresses that its system of producing books, usually in batches of 300, is the factory setting that Ross distinguished as a basis of patentability. The defendants concede that on occasion a single copy may be ordered and printed by Lightning Source, but that generally multiple copies are ordered and produced.

Defendants argue that neither Lightning Source nor Ingram nor Amazon provides customers with access to computers, and that no defendant provides or offers to customers an apparatus for point-of-purchase manufacture of a book. None of the defendants provides a system of computer access, nor sites for immediate printing and binding. The district court observed that wholesalers and publishers and stores, when ordering from Lightning Source, do not view promotional information; and that when retail customers order from Amazon's website the books may already have been printed.

ODMC responds that the customers provide themselves with computers, whether individual consumers or resellers. ODMC states that even if this court deems promotional material to be required by "sales information," and even if Lightning Source and Ingram do not provide promotional material, Amazon.com does provide such information to customers by computer. ODMC argues that when a customer orders from Amazon upon reviewing Amazon's promotional information, and Amazon in turn orders that the book be printed by Lightning Source, the defendants together infringe the patent. ODMC states that the jury could reasonably have found that Lightning Source and Amazon were liable for joint infringement, for the district court instructed as to joint infringement, as follows:

> It is not necessary for the acts that constitute infringement to be performed by one person or entity. When infringement results from the participation and combined action(s) of more than one person or entity, they are all joint infringers and jointly liable for patent infringement.

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> Infringement of a patented process or method cannot be avoided by having another perform one step of the process or method. Where the infringement is the result of the participation and combined action(s) of one or more persons or entities, they are joint infringers and are jointly liable for the infringement.

We discern no flaw in this instruction as a statement of law. However, the fundamental precept of the Ross invention is that the customer uses an on-site computer to view promotional information, and then initiates rapid single copy printing. A customer's placing an order with Amazon, who in turn obtains the book, even if it is printed in single copy, is not the Ross invention. Each of these components of the claimed invention is in the prior art; their combination is the patentable invention, and it is the practice of the combination that is essential to infringement. Taken separately, Amazon's method of taking orders for books is prior art; Amazon does not print books, and the immediate on-site printing of the Ross invention is absent.

The printing of a single copy of a book, using computer technology and high-speed printing, was prior art to the Ross patent. The defendants correctly point out that the Ross invention is the immediate printing and binding of a copy of a book, where the customer initiates this activity upon review of promotional information stored in a computer that is provided by the seller. Mr. Ross stressed during reexamination that the distinction of his invention over the Interpress reference is the inclusion of promotional information for customer access, and prompt book

production. The Interpress reference, as described by the reexamination examiner, shows computer-stored book text and information (but not promotional information), a means for selectively retrieving a stored book, and high-speed printing plus binding with a cover. However, Interpress does not show the direct customer role contemplated in the Ross patent; that role is central to the claim construction.

We conclude that no reasonable jury could find infringement, on the correct claim construction. The judgment of infringement is reversed. Because we reverse the judgment of infringement, the damages award is vacated.

III

The cross-appeal relates to the district court's denial of an immediate injunction upon entry of the district court's judgment, and the court's setting of a royalty for continuing operations during appeal. That remedy is within the district court's discretion. However, in view of our holding of non-infringement, the cross-appeal is moot, and is dismissed.

Each party shall bear its costs.

REVERSED; CROSS APPEAL DISMISSED.

APPENDIX B — AMENDED JUDGMENT OF THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF MISSOURI, EASTERN DIVISION DATED OCTOBER 28, 2004

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION

Case No. 4:01CV1668MLM

ON DEMAND MACHINE CORPORATION,

Plaintiff,

vs.

INGRAM INDUSTRIES, INC., LIGHTNING, SOURCE, INC. and AMAZON.COM, INC.,

Defendants.

AMENDED JUDGMENT

The case was ~~tried to a~~ jury and the jury has rendered its verdict. Accordingly,

IT IS HEREBY ORDERED, ADJUDGED AND DECREED that Judgment is entered in favor of plaintiff On Demand Machine Corporation and against defendants Ingram Industries, Inc., Lightning Source, Inc. and Amazom.Com, Inc. in the amount of $15,000,000.00.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that plaintiff shall recover from defendants

pre-judgment interest in the amount of $1,350,249.00 through December 31, 2003 with additional interest accruing from January 1, 2004 through July 23, 2004, calculated in the same manner as the interest for 1998-2003.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that plaintiff shall recover from defendants post-judgment interest at the rate of 2.07% from July 23, 2004 pursuant to 28 U.S.C. § 1961.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that defendant Lightning Source, Inc. is the alter ego of defendant Ingram Industries, Inc.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that post-verdict and post-judgment accounting is **ORDERED** and that the following accounting plan shall apply:

1. Within ten (10) days of entry of judgment by the court, defendants will provide Lightning Source's monthly sales and revenue figures for January 2004 through the months preceding the court's entry of judgment to the extent records have been finalized, and defendants will post Security for a two year period of time covering all monies awarded to plaintiff. Included in that Security will be $15,000,000 (or such greater amount resulting from an order or judgment enhancing damages, **if any**) plus pre-judgment interest awarded by the court, **if any,** and attorney's fees awarded by the court, **if any**. Also to be included in the Security shall be an amount equal to 12.64% of Lightning Source's revenues from January 1, 2004 through the month for which Lightning

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Source has prepared its last monthly financial report prior to the court's entry of judgment. Defendants' Exhibit A, previously filed with its Memorandum in Opposition [Doc. 332], is a schedule of the dates of the end of months for Lightning Source for 2004 and the date the monthly financial report is available.

2. Additionally, the Security will include 12.64% of budgeted revenues projected by Lightning Source for the remainder of the year through December 31, 2004.

3. Defendants will provide the statement for the month in which entry of judgment is made as reflected on Exhibit A, and thereafter, defendants will provide monthly statements to counsel for ODMC within five (5) business days of the report availability date.

4. This Security will be amended in January 2005 after year-end numbers are finalized by Lightning Source to reflect reconciliation and funding of 12.64% of Lightning Source's revenue for the months in 2004 for which projected revenues were used. In addition, the Security will be amended to cover the pre-judgment and post-judgment interest, **if any**, awarded by the court on all amounts to which such interest shall apply, as authorized by the court.

5. At the time the Security is amended in January 2005, the Security will be additionally funded to include 12.64% of Lightning Source's projected revenues for the first half of 2005 through June 30, 2005, and to include the pre-judgment and post-judgment interest, **if any**, awarded by the court on all amounts to which such interest shall apply, as authorized by the court.

6. If necessary, thereafter the Security will be amended and funded on a semi-annual basis by funding to represent 12.64% of the reconciled and actual revenues earned for the time period projected revenues were realized. Additionally, on a semi-annual basis the Security will be funded for 12.64% of Lightning Source's next six (6) months projected revenue and shall include the pre-judgment and post-judgment interest, **if any**, awarded by the court on all amounts to which such interest shall apply, as authorized by the court.

7. In the event the two year period on the Security is going to expire before a final judgment is entered in this matter, then defendants shall continue such Security for another two years in the manner as specified herein.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that a permanent injunction shall not issue.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that if Lightning Source, Inc. wishes to continue to utilize the method of Claim 8 of the Ross '213 Patent pursuant to the court's claim construction and the unanimous verdict of the jury, it shall enter a compulsory license agreement with On Demand Machine Corporation requiring Lightning Source to pay a royalty equal to 12.64425% of Lightning Source, Inc.'s total gross revenues from and after July 23, 2004 through the conclusion of all appellate and post-appellate proceedings.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that damages shall not be enhanced under 35 U.S.C. § 284.

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IT IS FURTHER ORDERED, ADJUDGED AND DECREED that attorney's fees shall not be awarded under 35 U.S.C. § 285.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that plaintiff shall recover costs from defendants.

/s/ Mary Ann L. Medler
MARY ANN L. MEDLER
UNITED STATES MAGISTRATE JUDGE

Dated this 28th day of October, 2004.

APPENDIX C — JUDGMENT OF THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF MISSOURI, EASTERN DIVISION DATED JULY 23, 2004

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION

Case No. 4:01CV1668MLM

ON DEMAND MACHINE CORPORATION,

Plaintiff,

vs.

INGRAM INDUSTRIES, INC.,
LIGHTNING SOURCE, INC. and
AMAZON.COM, INC.,

Defendants.

JUDGMENT

The case was tried to a jury and the jury has rendered its verdict. Accordingly,

IT IS HEREBY ORDERED, ADJUDGED AND DECREED that judgment is entered in favor of plaintiff On Demand Machine Corporation and against defendants Ingram Industries, Inc., Lightning Source, Inc. and Amazon.com, Inc. in the amount of $15,000,000 dollars.

Appendix C

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that plaintiff shall recover from defendants prejudgment interest in the amount of $1,350,249 through December 31, 2003 with additional interest accruing from January 1, 2004 through the date of this judgment, calculated in the same manner as the interest for 1998-2003.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that plaintiff shall recover from defendants post-judgment interest at the rate of 2.07% from the date of this judgment pursuant to 28 U.S.C. § 1961.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that defendant Lightning Source, Inc. is the alter ego of defendant Ingram Industries, Inc.

/s/ Mary Ann L. Medler
MARY ANN L. MEDLER
UNITED STATES MAGISTRATE JUDGE

Dated this 23rd day of July, 2004.

APPENDIX D — ORDER OF THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF MISSOURI, EASTERN DIVISION REGARDING INTERPRETATION OF CLAIMS 7 & 8 OF U.S. PATENT NO. 5,465,213 DATED AND FILED JULY 8, 2003

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION

Case No. 4:01CV1668MLM

ON DEMAND MACHINE CORPORATION,

Plaintiff,

vs.

INGRAM INDUSTRIES, INC.,
LIGHTNING SOURCE, INC. and
AMAZON.COM, INC.,

Defendants.

ORDER REGARDING INTERPRETATION OF CLAIMS 7 & 8 OF U.S. PATENT NO. 5465,213

In this action, Plaintiff On Demand Machine Corporation ("On Demand" or "Plaintiff') contends that Defendants Ingram Industries Inc. ("Ingram"), Lightning Source Inc. ("Lightning Source"), and Amazon.Com, Inc. ("Amazon.Com") (jointly, "Defendants") infringed its patent, U.S. Patent No. 5,465,213, entitled " System and Method of Manufacturing A Single Book Copy" ("the '213 Patent"). The

Court held a hearing, pursuant to *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 969 (Fed. Cir. 1995) (en banc) *(Markman), aff'd*, 517 U.S. 370 (1996), to determine the claim construction of the claims at issue, Claims 7 and 8. Prior to the hearing, the parties submitted *Markman* briefs. See Doc. 68, Doc. 69. After the *Markman* hearing, the parties submitted additional legal briefs.

The court, having given full consideration to the parties' submissions and the record of the hearing, makes the following findings of fact and conclusions of law with respect to the '213 patent.

1. In this action, On Demand contends that Defendants infringed its patent, U.S. Patent No. 5,465,213 (" '213 patent" or "Ross patent"), entitled "System and Method of Manufacturing A Single Book Copy" by using the methods of Claims 7 and 8 of the '231 patent to print books.[1]

2. The parties have submitted briefs on the interpretation of the claims of the patent-in-suit. The court also held a hearing in which it heard arguments on behalf of the parties presented by their respective counsel. Defendants were represented jointly by Keith A. Rabenberg and Plaintiff was represented by William B. Cunningham.

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1. It is undisputed that the Ross patent, as originally issued on November 7, 1995, had 8 claims. Subsequent to the reexamination of the Ross patent by the United States Patent Office ("PTO") as a result of newly uncovered prior art, a Reexamination Certificate issued on September 18, 2002. The Reexamination Certificate confirmed the patentability of Claims 7 and 8, and Claims 1-6 were canceled.

3. A literal patent infringement analysis involves two steps: the proper construction of the asserted claim and a determination as to whether the accused method or product infringes the properly construed asserted claim. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1581-82 (Fed. Cir. 1996) (*Vitronics*).

4. The Supreme Court has mandated that claim construction is a question of law to be resolved by the court. See *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S.Ct. 1384 (1996). *See also Markman*, 52 F.3d at 969.

5. The Federal Circuit has clarified the proper methodology for construing a patent claim. The court should first refer to the following intrinsic evidence: the patent itself, including the claims, the specification, and the prosecution history. *See Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369 (Fed. Cir. 2003) (Altiris); *Vitronics*, 90 F.3d at 1582; *Markman*, 52 F.3d at 979; *Gart v. Logitech, Inc.*, 254 F.3d 1334, 1339 (Fed. Cir. 2001), *cert. denied*, 534 U.S. 1114 (2002). "Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." *Vitronics*, 90 F.3d at 1582. Moreover, "in most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence." *Id.* at 1583.

6. In determining the proper construction of a claim, the court should look first "to the words of the claims themselves, both asserted and non-asserted." *Vitronics*, 90 F.3d at 1582. *See also*, *North American Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 1575 (Fed. Cir. 1993);

R2 Med. Sys., Inc. v. Katecho, Inc., 931 F. Supp. 1397, 1424 (N.D. Ill. 1996) (*R2 Medical*). Words in patent claims are given their ordinary and accustomed meanings unless the specification or prosecution history indicates otherwise. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In analyzing the intrinsic evidence, a court starts with the language of the claims. "The terms used in the claim bear a 'heavy presumption' that they mean what they say and have the ordinary meaning that would be attributed to those words by persons ordinary skilled in the relevant art." *Riverwood Intl Corp. v. R.A. Jones & Co.*, 324 F.3d 1346, 1357 (Fed. Cir. 2003) (*Riverwood*) (quoting *CCS Fitness Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (*CCS Fitness*)). If the patentee has chosen to be his own lexicographer and use terms in a manner other than their ordinary meaning, the special definition must be clearly stated in the patent specification or file history. *See Hoechst Celanese Corp. v. BP Chems. Ltd*, 78 F.3d 1575, 1578 (Fed. Cir. 1996).

7. "[D]ictionaries, encyclopedias and treatises are particularly useful resources to assist the court in determining the ordinary and customary meanings of claim terms." *Texas Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1201 (Fed. Cir. 2002) *(Texas Digital)* (citing *Teleflex, Inc. v. Ficosa N. Am Corp*, 299 F.3d 1313, 1325 (Fed. Cir. 2002) *(Teleflex); CCS Fitness*, 288 F.3d at 1366 ("[O]ur precedents show that dictionary definitions may establish a claim term's ordinary meaning."); *Application of Ripper*, 171 F.2d 297 (C.C.P.A. 1948) ("[I]t is clear that in ascertaining the meaning of [the claim term] as it appears herein, reference properly may be made to ordinary dictionaries") (other citations omitted).

"Dictionaries are always available to the court to aid in the task of determining meanings that would have been attributed by those of skill in the relevant art to any disputed terms used by the inventor in the claims." *Texas Digital*, 308 F.3d at 1202 (citing *Vitronics Corp.*, 90 F.3d at 1576) (other citations omitted). In particular, the Federal Circuit has stated regarding dictionaries that:

> [Dictionaries] publically available at the time the patent is issued, are objective resources that serve as reliable sources of information on the established meaning that would have been attributed to the terms of the claims by those of skill in the art.... Indeed, these materials may be the most meaningful sources of information to aid judges in better understanding both the technology and the terminology used by those skilled in the art to describe the technology.

Id. at 1202-03.

"[I]n most cases [standard English language dictionaries] will provide the proper definitions and usages, and technical dictionaries, encyclopedias and treatises [] may be used for established specialized meanings in particular fields of art." *Inverness Med. Switzerland v. Princeton Biomeditech Corp.*, 309 F.3d 1365, 1369 (Fed. Cir. 2002). The pertinent date pursuant to a dictionary inquiry is the dictionary definition "as of the date that the patent[] issued."[2] *Id.* at 1370. In the

2. The Federal Circuit acknowledged, in *Inverness Medical Switzerland v. Princeton Biomeditech Corporation*, that its decisions (Cont'd)

matter under consideration, the '213 patent was originally filed on July 12, 1993; the patent was issued on November 7, 1995; and the reexamination certificate issued on September 18, 2001, confirming the patentability of Claims 7 and 8.

8. The Federal Circuit recognizes that words often have multiple dictionary definitions. Under such circumstances, "the patent disclosure serves to point away from the improper meaning and toward the proper meaning." *Id.* at 1370. Thus, "the intrinsic records must always be consulted to identify which of the different possible dictionary meanings of the claim terms in issue is most consistent with the use of the words by the inventor." *Texas Digital*, 308 F.3d at 1203 (citing *Dow Chem. Co. v. Sumitomo Chem. Co.*, 257 F.3d 1364, 1372-73 (Fed. Cir. 2001); *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1478 (Fed. Cir. 1998)). "If more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings." *Id.* (citing *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001)). The Federal Circuit has further clarified that dictionaries are not categorized as "extrinsic evidence" or even "a special form of extrinsic evidence." *Id.*

9. A specification maybe useful in determining the ordinary meaning of a claim's terms where a dictionary has

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(Cont'd)

have not always been consistent as to whether the pertinent date is the filing date of the application or the issue date of the patent. 309 F.3d 1365, 1369 n.1 (Fed. Cir. 2002) (comparing *Texas Digital Sys., Inc. v. Telegenix*, 308 F.3d 1193,1202 (Fed. Cir. 2002) with *Schering Corp. v. Amgen, Inc.*, 222 F.3d 1347, 1353 (Fed. Cir. 2000)).

been consulted but it is necessary to choose between multiple definitions. *See Texas Digital*, 308 F.3d at 1203. Additionally, the Federal Circuit discussed, in *CCS Fitness*, 288 F.3d at 1366-67, the use of the specification to rebut the presumption that a claim carries its ordinary meaning. The court stated:

> First, the claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history. *E.g.*, *Johnson Worldwide*, 175 F.3d at 990, 50 USPQ2d at 1610; *Rexnord*, 274 F.3d at 1342, 60 USPQ2d at 1854. Second, a claim term will not carry its ordinary meaning if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention. *E.g.*, *Spectrum Int'l*, 164 F.3d at 1378, 49 USPQ2d at 1068-69. . . . Third, . . . a claim term also will not have its ordinary meaning if the term "chosen by the patentee so deprives the claim of clarity" as to require resort to the other intrinsic evidence for a definite meaning. *E.g.*, *Johnson Worldwide*, 175 F.3d at 990, 50 USPQ2d at 1610; *Gart*, 254 F.3d at 1341, 59 USPQ2d at 1295. Last, as a matter of statutory authority, a claim term will cover nothing more than the corresponding structure or step disclosed in the specification, as well equivalents thereto, if the patentee phrased the claim in step-or means-plus-function format.

Appendix D

35 U.S.C. ¶ 6; *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880-81, 56 USPQ2d 1836, 1838 (Fed. Cir. 2000).

10. Despite the Federal Circuit's emphasis on dictionary definitions in *Texas Digital*, it did clarify that "in every case" the intrinsic record must be examined "to determine if the presumption of ordinary and customary meaning is rebutted." 309 F.3d at 1204. The presumption in favor of a dictionary definition may be overcome where "the specification uses words in a manner clearly inconsistent with the ordinary meaning reflected." *Id.* at 1204. Thus, this presumption "will be overcome where the patentee, acting as his or her own lexicographer, has clearly set forth an explicit definition of the term different from its ordinary meaning." *Id.* (citing *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994); *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1387-88 (Fed. Cir. 1992)). Indeed, "'inventors are free to define the specific terms used to describe his or her invention.'" *Riverwood*, 324 F.3d at 1357 (quoting *In re Paulsen*, 30 F.3d at 1480).

11. However, "the written description and prosecution history" should not be consulted "as a threshold step in the claim construction process." *Texas Digital*, 308 F.3d at 1204. The Federal Circuit said, in *Texas Digital*, that to do so would be to "invite[] a violation of [its] precedent counseling against importing limitations into claims." *Id.* (citing *Generation II Orthotics Inc. v. Med. Tech. Inc.*, 263 F.3d 1356, 1357 (Fed. Cir. 2001) ("The district court should have construed the claim limitation 'controlled' according to its ordinary and accustomed meaning [citing medical dictionary], rather than importing a characteristic of a disclosed or preferred

embodiment into that term."); *Locite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 867 (Fed. Cir. 1985) ("Generally, particular limitations or embodiments appearing in the specification will not be read into the claims."), *overruled on other grounds, Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059 (Fed. Cir. 1998) (other citations omitted).

The court in *Texas Digital* explained the danger of consulting the written description. "[I]f the invention is disclosed in the written description in only one exemplary form or in only one embodiment, the risk of starting with the intrinsic record is that the single form or embodiment so disclosed will be read to require that the claim terms be limited to that single form or embodiment." 308 F.3d at 1204. Thus, the Federal Circuit cautions against the limitation of the claimed invention to preferred or specific embodiments and warns that where a specification describes only one embodiment it is not required that each claim be limited to that one embodiment. *See id.* The Federal Circuit further warns that "one can easily be mislead to believe that this is precisely what [its] precedent requires when it informs that disputed claims terms should be construed in light of the intrinsic record." *Id.* (citing *Markman*, 52 F.3d at 980) (stating that claims must be construed in light of the specification and the patent's prosecution history, if in evidence).

12. After examining the words of the claims, the court may also consider the prosecution history of the patent, which is a complete record of all the proceedings before the PTO, including express representations made by the applicant regarding the scope of the patent claims. *See Vitronics*, 90 F.3d at 1582. The prosecution history may present the

patentee's understanding of specific claims as well as limit the meaning of the claims' terms to exclude any interpretation that was disavowed by the inventor in his or her effort to obtain the patent. *See Markman*, 52 F.3d at 980. *See also Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995) *(Southwall)* (holding that the prosecution history limits the interpretation of the claims so as to exclude any interpretation that was disclaimed during prosecution of the patent).

The Federal Circuit has recently defined the role of prosecution history in regard to claim construction and stated that:

> The district court [] relied on the written description, prosecution history, and a declaration by [the defendant's] expert witness regarding the purpose of the invention to define claim 1 to require a cache for the instance of network policy. In so doing, the district court disregarded the well-established rule that while proper claim construction requires an examination of the written description and relevant prosecution history to determine the meaning of claim limitations, additional limitations may not be read into the claims. *See, e.g., Prima Tek II, L.L.C. v. Polypap, S.A.R.L.*, 318 F.3d 1143, 1148, 65 USPQ2d 1818, 1821 (Fed.Cir.2003); *Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186, 48 USPQ2d 1001, 1005 (Fed.Cir.1998). We have recognized that there is sometimes a fine line between reading a claim in

> light of the written description and relevant prosecution history, and reading a new limitation into the claim. *Comark*, 156 F.3d at 1186, 48 USPQ2d at 1005. However, "interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation . . . , which is improper.'" *Intervet Am., Inc. v. Kee-Vet Labs., Inc.*, 887 F.2d 1050, 1053, 12 USPQ2d 1474, 1476 (Fed.Cir.1989) (quoting *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1433, 7 USPQ2d 1129, 1131 (Fed.Cir.1988)).

Storage Tech. Corp. v. Cisco Systems, Inc., 329 F.3d 823, 831 (Fed. Cir. 2003) (*Storage Technology*).

The Federal Circuit, in *Storage Technology*, noted that a statement made during prosecution history appeared to limit claim scope. The court said, however, that this language "cannot do so absent some claim language referring to" this apparent limitation. 329 F.3d at 832. The Federal Circuit further stated that "[t]he prosecution history statement describes generally the features of the claimed invention and erroneously suggests that the independent claims include a cache for the instance of network policy. The applicants' inaccurate statement cannot override the claim language itself, which controls the bounds of the claim." *Id.* at 832 (citing *Rambus Inc. v. Infineon Techs. Ag*, 318 F.3d 1081, 1089 (Fed.Cir.2003) (holding that a general statement introducing new limitations does not limit scope of claims not amended to include the new limitations); *Intervet Am., Inc. v. Kee-Vet Labs, Inc.*, 887 F.2d 1050, 1054 (Fed. Cir. 1989) (holding that an erroneous statement made during

prosecution does not limit claim scope because "[t]he claims themselves control")).

Additionally, statements made during prosecution which indicate that an invention can be used in a certain manner, do not limit the scope of the invention to that narrow context "[a]bsent a clear disclaimer of a particular subject matter." *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 326 F.3d 1215, 1223 (Fed. Cir. 2003) (*Brookhill-Wilk*) .

13. "Extrinsic evidence may never be relied upon ... to vary or contradict the clear meaning of terms in the claims." *Altiris*, 318 F.3d at 1369 (citing *Markman*, 52 F.3d at 981). However, if the intrinsic evidence is insufficient to determine the meaning of the asserted claims, the court may also rely on extrinsic evidence to better understand the patent and the embodied art. *See Riverwood*, 324 F.3d at 1358 (holding that district courts are free to consider extrinsic evidence "'to help the court come to the proper understanding of the claims'") (quoting *Vitronics*, 90 F.3d at 1584). *Also see*, *Markman*, 52 F.3d at 980-81; *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1309 (Fed. Cir. 1999) (*Pitney Bowes*). Extrinsic evidence is that which is external to the patent and file history. However, extrinsic evidence in general, and expert testimony in particular, may be used only to help the court come to the proper understanding of the claims; it may not be used for the purpose of varying or contradicting the terms of the claims. *See Riverwood*, 324 F.3d at 1358; *Markman*, 52 F.3d at 980-81. Nor may it contradict the import of other parts of the specification. Indeed, where the patent documents are unambiguous, expert

testimony regarding the meaning of a claim is entitled to no weight. *See Vitronics*, 90 F.3d at 1584.

14. Arising either in the prosecution history or separately submitted as extrinsic evidence, the prior art may be relevant to interpreting the scope of an asserted claim. As part of the prosecution history, prior art represents a legislative history to help determine the proper scope of a claim. *See R2 Med.*, 931 F. Supp. at 1427-28. As extrinsic evidence, it may provide important clues to understanding the definition of technical terms of art. *See Markman*, 52 F.3d at 980. Where the terms of a claim are susceptible to two reasonable interpretations, a court may look to the prior art in order to adopt the interpretation that preserves the validity of the claim. *See Texas Instruments*, 871 F.2d at 1065. However, a court may not use evidence extrinsic to the patent and prosecution history in order to change the meaning of a claim when that interpretation is made clear by these documents. *See Southwall*, 54 F.3d at 1578.

15. Under 35 U.S.C. § 112, paragraph 6, claim limitations may be expressed as a means for performing a specified function, without recitation in the claim of the particular structure for performing that function. This type of claim is called a "means-plus-function" claim. Instead of reciting a particular structure, a "means-plus-function" limitation describes an element of a product claim as a "means or step for performing a specified function." 35 U.S.C. § 112, ¶ 6. Claims expressed in means-plus-function format, therefore, must be narrowly construed in light of the patent specification. *See In re Donaldson Co.*, 16 F.3d at 1195-96 (analyzing "means" language in claim

and applying a narrow construction in light of the narrow recitation of the structure found in the summary of the invention and the description of the preferred embodiment). The statute "rules out the possibility that any and every means which performs the functions specified in the claim literally satisfied the limitation." *Pennwalt*, 833 F.2d at 934.

16. Section 112, ¶ 6, permits "use of means expressions without recitation of all possible means that might be used in a claimed apparatus.... The price that must be paid for use of that convenience is limitation of the claim to the means specified in the written description and equivalents thereof." *Texas Digital*, 308 F.3d at 1208 (quoting *O.I. Corp.*, 115 F.3d at 1583). Thus, where § 112, ¶ 6, is invoked, the structure in the specification must be linked to the recited function. *See id.* at 1208-09. "If a patentee fails to disclose an adequate corresponding structure in the specification, the patentee may fail to satisfy the bargain embodied in the statutory quid pro quo of section 112, paragraph six." *Id.* at 1215 (citing *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1360 (Fed. Cir. 2000)).

17. "The use of the word 'means,' which is part of the classic template for functional claim elements, gives rise to 'a presumption that the inventor used the term advisedly to invoke the statutory mandates for means-plus-function clauses.'" *Sage Prods. v. Devon Indus., Inc.*, 126 F.3d 1420, 1422-23 (Fed. Cir. 1997) (*Sage Products*) (quoting *York Prods., Inc. v. Central Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1574 (Fed. Cir. 1996)). *See also, Altiris*, 318 F.3d at 1375. This is because "the use of the term 'means' has come to be so closely associated with 'means-plus-function'

claiming that it is fair to say that the use of the term 'means' . . . generally invokes section 112(6)." *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1584 (Fed. Cir. 1996). However, the presumption is rebutted "where the claim, in addition to the functional language, recites structure sufficient to perform the claimed function in its entirety." *Altiris*, 318 F.3d at 1375 (citing *Sage Products*, 126 F.3d at 1427-28). On the other hand, "'a claim term that does not use "means" will trigger the rebuttable presumption that § 112, ¶ 6 does not apply.'" *Apex Inc. v. Paritan Computer, Inc.*, 2003 WL 1725618, *5 (Fed. Cir. Apr. 2, 2003) (quoting *CCS Fitness*, 288 F.3d at 1369).

18. Each means-plus-function limitation must be clearly and specifically linked with corresponding structure in the specification. *See B. Braun*, 124 F.3d 1419, 1424-25 (Fed. Cir. 1997) (*B. Braun Med*). If the patentee fails to do so, the patentee has failed to particularly point out and distinctly claim the invention as required by section 112, paragraph two, of the patent statute. *See id.* A means-plus-function claim limitation cannot be construed to encompass a structure which is not specifically linked to that claim limitation in the specification. *See id.* In order to construe means-plus-function patent claims in a valid manner, it is necessary to limit those claims to only the structures specifically disclosed in the specification for performing the functions set forth in the claims.

19. "'It is well settled that if the body of the claim sets out the complete invention, and the preamble is not necessary to give life, meaning and vitality to the claim, then the preamble is of no significance to claim construction because

it cannot be said to constitute or explain a claim limitation.'" *Altiris*, 318 F.3d at 1371 (quoting *Schumer v. Lab. Computer Sys., Inc.*, 308 F.3d 1304, 1310 (Fed. Cir. 2002) *(Schumer)* (citations and internal quotes omitted). "'Whether a preamble stating the purpose and context of the invention constitutes a limitation of the claimed process is determined on the facts of each case in light of the overall form of the claim, and the invention as described in the specification and illuminated in the prosecution history.'" *Id.* (quoting *Applied Materials, Inc. v. Advanced Semiconductor Materials America, Inc.*, 98 F.3d 1563, 1572-73 (Fed. Cir. 1996). *See also, Corning Glass Works v. Sumitomo Electric U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1996) (*Corning Glass*) (holding that the issue of whether a preamble is a limitation is "resolved only on review of the entire [] . . . patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim").

The preamble will not limit the scope of the claim when it merely states a purpose or intended use of the invention and "where the patentee defines a structurally complete invention in the claim body." *Catalina Mktg. Int'l, Inc. v. Coolsavings*, 289 F.3d 801, 808 (Fed. Cir. 2002) *(Catalina)*. See *also, In re Paulsen*, 30 F.3d at 1479. "[W]hen the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention," the preamble does not limit the scope of the claim. *Catalina*, 289 F.3d at 809.

20. However, "a preamble limits the invention if it recites essential structure or steps, or if it is 'necessary to give life, meaning, and vitality' to the claim." *Catalina*, 289

F.3d at 808 (quoting *Pitney Bowes*, 182 F.3d at 1309. *See also, In re Paulsen*, 30 F.3d at 1479 (holding that the terms of a preamble may be limitations of a claim if they "'give meaning to the claim and properly define the invention'") (quoting *Gerber Garment Tech., Inc. v. Lectra Sys., Inc.*, 916 F.2d 683, 688 (Fed. Cir. 1990)); *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620 (Fed.3d 615, 620 (Fed. Cir. 1995) (holding that a preamble imposes a limitation where the inventor relied on it to define the claimed invention). In particular, "when reciting additional structure or steps underscored as important by the specification, the preamble may operate as a claim limitation." *Catalina*, 289 F.3d at 808 (citing *Corning Glass*, 869 F.3d at 1257) (other citations omitted). Also, "clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention." *Id.* (citing *Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1375 (Fed. Cir. 2001)).

THE '213 PATENT

21. The Court's analysis of the '213 patent is based entirely on intrinsic evidence consisting of the patent and the prosecution history.

22. At issue in the '213 patent are Claims 7 and 8. These claims are independent claims.

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23. ***CLAIM 7***: Claim 7 of the '213 patent recites, in its entirety:

A method of high speed manufacture of a single copy of a book comprising the steps of:

(2) storing the text of a plurality of books in a computer,

(3) storing a plurality of covers for books to be printed in said computer, said covers being stored in a bit mapped format,

(4) storing sales information relating to said plurality of books in a computer,

(5) providing means for a customer to scan said sales information,

(6) enabling the customer to select which book or a portion of a plurality books,

(7) commanding a computer to print the text of selected books and a cover in response to said selection,

(8) retrieving the text of said selected books from a computer,

(9) printing the text of said selected books on paper pages, and

(10) binding said paper pages together to form said selected one of said books.

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24. Defendants argue that the steps of Claims 7 and 8 must be performed in the order in which the claims are written. *See* Doc. 83. Plaintiff points out that *Altiris* states that "'[u]nless the steps of a method actually recite an order, the steps are not ordinarily construed to require one'." 318 F.3d at 1369 (quoting *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1342-43 (Fed. Cir. 2001) (*Interactive Gift*)). The court further explained, however, to properly apply the standard for determining whether an order is required, related precedent must be examined. The court said:

> *Interactive Gift* recites a two-part test for determining if the steps of a method claim that do not otherwise recite an order, must nonetheless be performed in the order in which they are written. *Id.* First, we look to the claim language to determine if, as a matter of logic or grammar, they must be performed in the order written. *Id.* [at 1323]. For example, in *Loral Fairchild Co. v. Sony Electronics Co.*, 181 F.3d 1313, 1321, 50 USPDQ3d 1865, 1870 (Fed. Cir. 1999), we held that the claim language itself indicated that the steps had to be performed in their written order because the second step required the alignment of a second structure with a first structure formed by the prior step. *See also Mantech Envtl. Corp. v. Hudson Envtl. Servs., Inc.,* 152 F.3d 1368, 1375-76, 47 USPQ2d 1732, 1739 (Fed. Cir. 1998) (holding that the steps of a method claim had to be performed in their written order because each subsequent step referenced something logically

> indicating the prior step had been performed). If not, we next look to the rest of the specification to determine whether it "directly or implicitly requires such a narrow construction." *Interactive Gift*, 256 F.3d at 1343, 59 USPQ2d at 1416. If not, the sequence in which such steps are written is not a requirement.

Upon examination of the specification to determine whether an order is required, the Federal Circuit continued to state in *Altiris* that the court should apply the rules of claim construction as set forth in *Texas Digital*, 308 F.3d at 1203. In other words, "claim terms have their ordinary and customary meaning unless the patentee demonstrated an intent to deviate from [that meaning]." *Altiris*, 318 F.3d at 1370 (quoting *Teleflex*, 299 F.3d at 1327). The court continued to state that:

> It follows from that proposition that "the number of embodiments disclosed in the specification is not determinative of the meaning of disputed claim terms." [*Teleflex*, 299 F.3d at 1327]. Nor are claims ordinarily limited in scope to the preferred embodiment. These principles apply with equal force where, as in the case here, the limitation to be imported from the specification is an order of method steps, rather than a limitation on a specific claim term.

The Federal Circuit in *Altiris* concluded that there was nothing in the intrinsic evidence before the court which indicated that one step had to be performed before another.

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Upon considering the claim language the Federal Circuit in *Altiris* considered that nowhere was "there any statement that [an] order is important, any disclaimer of any other order of steps, or any prosecution history indicating a surrender of any other order of steps." *Id.* at 1371. The court also considered that expert testimony made it clear that "one of ordinary skill in the art would understand that the stated purpose could be achieved without performing the 'setting' step prior to the 'booting step' and that expert testimony clarified that it was possible to achieve the invention's purpose by performing the "'setting' step before, during, or after the 'booting normally' step." *Id.* Thus, the Federal Circuit, in *Altiris*, construed the claims to allow the "setting" step to occur at any time.

25. Defendants assert that the computer storage of the text and covers of books in Claim 7, clauses 2 and 3 must be accomplished before the text can be retrieved (clause 8), printed (clause 9), and bound (clause 10). Defendants further contend that the sales information of clause 4 must be stored before a customer can be provided means to view the sales information as required by clause 5, and that the customer must be enabled to select a book or portion of a book (clause 6) before the computer can be commanded to print the text and cover of the selected book in response to the selection (clause 7). *See* Doc. 83 at 2. Defendants also contend such an order is required by Claim 8. Plaintiff argues that nothing in Claims 7 and 8 implicitly require that the functions described in these claims be performed in the order written.

The court agrees with Defendants that it is implicit in Claims 7 and 8 that computer storage of the text and book

covers must be accomplished before the text or covers can be retrieved; that the sales information must be stored before a customer can be provided means to view the sales information; and that the customer must be enabled to select a book or portion of a book before the computer can be commanded to print the text and cover of the selected book. However, the claims, specification, and/or prosecution history do not otherwise directly or implicitly require that the steps of Claims 7 and 8 be performed in the order written. For example, a customer could select a book, and then choose to view the sales information prior to directing the computer to print the book. Likewise, a customer could choose to print a book without viewing the sales information stored in the computer, or a customer could view the sales information after printing the book.

The court finds that there was nothing in the intrinsic evidence before this court which would indicate that the steps of Claims 7 and 8 of the '213 patent have to be performed in the order stated. Nowhere is "there any statement that [an] order is important, any disclaimer of any other order of steps, or any prosecution history indicating a surrender of any other order of steps." *Altiris*, 318 F.3d at 1371. Additionally, the court finds that it clear that one of ordinary skill in the art would understand that the stated purpose of Claims 7 and 8 can be achieved without performing the steps of the claims in any particular order other than what is discussed above as logically required. *See id.*

26. The preamble of Claim 7, as well as that of Claim 8, recites: *A method of high speed manufacture of a single copy of a book comprising the steps of.* Defendants

argue that the preamble acts as a legal limitation on the subject matter claimed because it breathes life and meaning into the remainder of the claim. Defendants further argue that the preamble is a substantive part of the claim. Plaintiff contends that the preamble merely states a purpose or intended use for the method described by the claim, and that it does not serve as a limitation.

In their *Markman* brief, Defendants argue that the phrases "high speed manufacture" and "single copy of a book" limit the scope of the claim and that these phrases go beyond what is necessary to describe the purpose or intended use of the invention. *See* Doc. 69 at 34-35. In support of this position, Defendants further argue that the patentee could have simply used a basic preamble such as "a method of manufacturing a book comprising." Defendants reference the "Background of the Invention" and the "Summary of Invention" sections of the '213 patent and argue that the specification dictates that the claim language not be interpreted to cover manufacturing processes that are not high speed or which do not result in the manufacture of a "single copy of a book." Defendants interpret the preamble to require, therefore, that all steps of the manufacture "must take place within a short period of time," and to limit the claim to a "single copy" of a book, not multiple copies. Doc. 69 at 37. Additionally, in support of their position that the preamble acts as a limitation, Defendants cite prosecution history. *See id.* Defendants point to Plaintiff's attorney's providing the examiner with a table showing the language of the claims and the disclosure and antecedent basis for the independent claims of the patent. *See* Doc. 69 at 37. Defendant contends that the attorney stated that the preamble described the book manufacturing system shown in figures 1-4.

27. The court first notes that the preamble of Claim 7 sets forth the purpose of the invention. Additionally, the '213 patent does not disclose that the inventor intended the language of the preamble to represent an additional step or limitation. *See In re Paulsen*, 30 F.3d at 1479. Most significantly, the language of the body of the claim sets out the complete invention in that it describes, in detail, the functional attributes of the method of high speed manufacture of a single copy of a book, and the inventor of the '213 patent did not rely on the preamble to define the invention. Indeed, the preamble is not necessary to understand limitations or terms in the body of the claim.

28. The court also finds that the preamble does not recite additional structure or steps underscored as important by the specification. *See Catalina*, 289 F.3d at 808. The court further finds that the prosecution history cited by Defendants does not establish that the inventor relied on the preamble to distinguish the '213 patent from prior art. *See id.* As such, neither the specification nor prosecution history support Defendants' position that the preamble acts as a claim limitation.

29. The court further finds that Defendants' position is contrary to the recent mandate of the Federal Circuit in *Schumer*, that if the body of a claim sets out the complete invention and "the preamble is not necessary to give 'life, meaning and vitality' to the claim, 'then the preamble is of no significance to claim construction because it cannot be said to constitute or explain a claim limitation.'" 308 F.3d at 1310 (quoting *Bristol-Myers Squibb Co. v. Ben Venue Labs, Inc.*, 246 F.3d 1368, 1373-74 (Fed. Cir. 2001)). Because the

body of Claim 7 sets out the complete invention and "the preamble is not necessary to give 'life, meaning and vitality' to the claim, the court finds that the language of the preamble is superfluous. Because the preamble is introductory in nature, the phrase "high speed manufacture" in the preamble does not limit the claim to require that all other steps, such as a customer's scanning sales information, selecting a book, and then printing and binding a book, must take place within a short period of time, as suggested by Defendants. Additionally, because the preamble is introductory in nature and does not impose a limitation on the claim, it does not limit the claim to the manufacture of a "single copy" of a book, as opposed to manufacturing several or multiple copies.[3]

30. The preamble to Claim 7 includes the word "book." This word is likewise used numerous times in Claim 7 as well as in Claim 8. Plaintiff cites as the dictionary definition of "book": "a set of written, printed, or blank sheets bound together into a volume." Doc. 68 at 20 (citing *Merriam-Webster's Collegiate Dictionary* (2000). Defendants cite *Merriam Webster On-line Dictionary* at www.m.com for the dictionary definition of book as follows: "a set of written, printed, or blank sheets bound together in a volume." The court notes that the dictionary definitions for "book" cited by the parties are substantially the same. However,

3. Plaintiff suggests that Defendants take the position that they do in regard to the preamble because such a position would suggest that the claim would not be infringed if the accused made two books rather than "a single book copy" and if the accused did not manufacture the book within more than a few minutes from start to finish. *See* Doc. 68 at 18-20.

Defendants assert that the patent describes "book" as including both text and a cover, and that the meaning of the term "book," in the context of the '213 patent, requires that "written, printed, or blank sheets [be] bound together with a cover into a volume." Doc. 69 at 38; Doc. 63 at 13. Neither the preamble of Claim 7 nor the other clauses of the '213 patent do not "clearly set forth an explicit definition of the term ["book" which is] different from its ordinary meaning." *Texas Digital*, 308 F.3d at 1201. As the common dictionary definition of "book" applies, to which definition the parties agree, and because the preamble is introductory in nature, the court finds that the preamble does not impose limitations beyond that required by the claims and that the preamble does not require that the book be bound with a cover.

31. The preamble to Claim 7 includes the word "comprising." Defendants assert that the word "comprising" is an "open" transition phrase and that as such it does not limit the scope of the claim in which it is used to the elements provided by the claim. *See* Doc. 69 at 38-39. Defendants assert that this characterization of "comprising" means that all of the listed steps of Claim 7 must occur, although other steps may occur as well. Plaintiff agrees and asserts that this term means that the claimed method includes the following steps or acts, but does not exclude other steps or acts. The Federal Circuit did hold in *AFG Industries, Inc. v. Cardinal IG Co., Inc.*, 239 F.3d 1239, 1244-45 (Fed. Cir. 2000) (*AFG Industries*), that:

> We refer to claim terms like "composed of" as "transition phrases." When a claim uses an "open" transition phrase, its scope may cover

> devices that employ additional, unrecited elements. *See Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 1271, 229 USPQ 805, 812 (Fed. Cir. 1986). We have consistently held that the word "comprising" is an open transition phrase. *See id.*; *see also Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 977, 52 USPQ2d 1109, 112 (Fed. Cir. 1999). In contrast, "closed" transition phrases such as "consisting of" are understood to exclude any elements, steps, or ingredients not specified in the claim. *See PPG Indus. v. Guardian Indus. Corp.*, 156 F.3d 1351, 48 USPQ2d 1351, 1354 (Fed. Cir. 1998).

The court finds, therefore, that "comprising" in the preamble of the '213 patent is an open transition phrase. *See AFG Industries*, 239 F.3d at 1244-45.

32. The dictionary definition of "comprise" is "to include; contain." *Websters II, New Riverside University Dictionary* (1988). The claims of the '213 patent, its specification, and its prosecution history do not set forth an explicit definition of the term "comprising" which is different from its ordinary meaning. *See Texas Digital*, 308 F.3d at 1203-03. The court finds, therefore, that "comprising" means that the claimed method includes the following steps or acts, but does not exclude other steps or acts. *See AFG Industries*, 239 F.3d at 1244-45.

33. Claim 7 includes the language: *storing the text of a plurality of books in a computer.* Defendants argue that, in the context of the specification and prosecution history, the

language "storing the text" means that such storage is required to be in a bit mapped format. Plaintiff argues that "storing the text" means that the text of two or more books are stored in a computer.

The court will first address the meaning of the words in the phrase "storing the text of a plurality of books in a computer." Plaintiff's cite common dictionary definitions of the terms of this phrase and urge the court to adopt those definitions. Defendants do not address the meaning of the specific words in this phrase. Arguably, however, Defendants urge the court to assume that the inventor was his own lexicographer and to consider the prosecution history more significant than the plain language of the claims. Defendants assert that, "in the context of the specification and prosecution history," this phrase requires that storage of the text be in a bit map format despite the fact that the phrase does not directly reference a bit map format. Doc. 69 at 39. The court, however, is bound by the Federal Circuit's holding that in most cases dictionaries will provide proper definitions and usages for claim interpretation, although the specification and prosecution history should be examined. See *Inverness Medical*, 309 F.3d at 1369.

"Text" is defined as "[t]he words or wording of something written or printed" or "the formal content of a printed work." *Webster's II, New Riverside University Dictionary* (1988). Plaintiff states that "text" is widely known to be "the main body of a book excluding the front and back matter." Doc. 68 at 23 (citing *Webster's New World Dictionary* (1979)). "Store" is defined as "to reserve or put away for future use." *Websters II, New Riverside University*

Dictionary (1988). These terms are used repeatedly in Claims 7 and 8. The language of the patent does not suggest that the inventor intended definitions of the words "text" and "store" which differ from dictionary definitions. The court finds that the claims of the '213 patent, its specification, and its prosecution history do not "clearly set forth an explicit definition of the term[s] ["text" or "store" which are] different from [their] ordinary meaning." *Texas Digital*, 308 F.3d at 1201.

35. Defendants further argue that "computer" has its commonly accepted meaning of one computer comprised of a central processing unit and that the term "computer," as used in Claim 7 does not refer to collections of computers or networks. Defendants take the position that "a computer" is limited to "one computer comprised of a central processing unit, along with applicable memory, storage, and input and output devices." *See* Doc. 69 at 42. Plaintiff argues to the contrary and points to Figures 1 and 3 of the '213 patent, which figures display multiple computers connected in a network and connected to a central computer via a modem and public telephone network.

Defendants contend that the article "a" suggests a single computer. *See* Doc. 69 at 42 (citing *AbTox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023 (Fed. Cir. 1997) (*AbTox*)). However, the Federal Circuit in *AbTox* recognized that "patent claim parlance also recognizes that an article can carry the meaning of 'one or more.'" 122 F.3d at 1023 (citing *North Am. Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 1575-76 (Fed. Cir. 1993)). Most recently, in *Altiris*, 318 F.3d at 1373, upon determining whether "a" flag referred to a

single flag or one or more flags, the Federal Circuit stated that "'a' generally means 'one or more' in open-ended claims." Because there were "no statements in the specification or the prosecution history inviting, much less requiring, [the court] limit the claims to the only disclosed embodiment," the Federal Circuit found that "a" referenced one or more flags. This court finds this reasoning of *Altiris* is applicable to the matter under consideration.

Additionally, there is nothing in the specification or the prosecution history of the '213 patent which suggests disavowal of any broad meaning of the term "computer" which would restrict its meaning to a single or stand alone computer which is not part of a network. This proposition is supported by Figures 1 and 3 which disclose multiple computers connected in a network and connected to a central computer via a modem and the public telephone network. The court finds, therefore, that the term "a" computer as used in the claim is not restricted to a single or one computer.

36. As stated above, Defendants argue that "storing the text a plurality of books in a computer," as stated in Claim 7, clause 2, requires that the text be stored in a bit mapped format, while Plaintiff argues that no format is specified. As also stated above, the plain language of this claim clause does not specify a bit mapped format. In support of their position regarding a bit mapped format, Defendants cite prosecution history including the reference of the inventor's attorney to the advantages of a bit map format

system over other formats. In particular, Defendants cite the attorney's arguing to the Examiner that:

> [O]ne of the main attributes of the invention of the '213 patent is to store text pages of the books in an "as scanned" format which is an "electronic picture" of the text and/or cover page. The digital data corresponding to the text pages are stored in the computer in this digital format . . . such that upon printing of these pages, the intellectual integrity of the book text is maintained. In contradistinction, with a program like Interpress, the user of the Interpress program has complete freedom to modify the data, to change it and to update it. If the Interpress language were to be used with the applicant's on-demand book publishing system, authors, publishers, and users of the system would have little or no confidence that the books published by the system would be the same as that intended by the author or the publisher. . . . For this reason, the Interpress system is highly unlike the Patent Owner's apparatus and method.

Def. Ex. 3 at FH 467-68.

Additionally, the inventor's attorney stated, in response to the Examiner's Action, that "there are major, fundamental differences between the vector-based page description Interpress language and the Patent Owner's system and method in which the text and cover of the books are required to be stored in a bit mapped format." *See* Def. Ex. 9.

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Plaintiff acknowledges that On Demand did make arguments to the Examiner regarding the advantages of bit mapped files in regard to other claims that expressly stated the files were stored in the computer in a bit mapped format. Plaintiff argues, however, that these arguments did not apply to the claim terms of Claims 7 and 8, but rather to claims which expressly stated that files were stored in a bit mapped format. *See* Doc. 68 at 24. The court notes that Claims 1 and 6, which claims were disallowed, specifically mentioned a bit mapped format, and disallowed Claims 2 and 3 were dependent claims which incorporated Claim 1. Claim 7 references bit mapping in clause 3, in regard to storing a plurality of book covers, but does not reference bit mapping in clause 2, in regard to storing the text of a plurality of books.

The court further notes that upon reexamination, the Examiner stated that, with regard to Claim 1, Interpress, the alleged invalidating prior art, discloses "the storage of bit-mapped images." Joint Ex. 1 at FH 533. The Examiner further stated that, with regard to Claim 5, this claim "has no limitations to storage of information in a bit-mapped format," and that, with regard to Claim 6, "Interpress discloses all the claim requirements for the same reasons discussed above with regard to claim 1." *Id.* The Examiner further stated:

> The comments in the request and the preliminary amendment have been considered and are deemed answered in the above rejection. It is further noted that patent owner's comments regarding the storage of information in bit mapped form have been considered. It is submitted that despite the discussion appearing at pages 6 and 7 of

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> Interpress, the discussion at pages 240-243 and all of Chapter 6 clearly indicates the storing of text and graphics in bit mapped form in the system of Interpress.

Joint Ex. 1 at FH 555.

Significantly, the Examiner stated in his action, mailed September 18, 1998, in regard to comparing Claim 7 to prior art XPS, that "there is no disclosure [in XPS] of storing cover information in bit mapped format nor the storing of any sales information as described in the patent." Joint Ex. 1 at FH 556. The Examiner further stated that, in regard to comparing Claim 8 to prior art XPS, that "there is no disclosure [in XPS] of storing cover graphical information nor any feature of allowing a user to visually review the sales information." Joint Ex. 1 at FH 556. Likewise, in regard to comparing Claim 7 with the Gauronski patent, the Examiner stated that "there is no disclosure [in Gauronski] of storing cover information in bit mapped format." Joint Ex. 1 at FH 558. In agreement with Plaintiff, the court finds that these statements establish that the Examiner considered that Claim 7 expressly required covers to be stored in a bit mapped format and that text was not required to be stored in a bit mapped format. Even if statements made during prosecution of the '213 patent indicate that an embodiment of the invention could encompass a bit mapped format, the court cannot limit the scope of the invention to that bit mapped format "[a]bsent a clear disclaimer" of other formats. *Brookhill-Wilk*, 326 F.3d at 1223. Because claim language does not refer to storing the text in a bit mapped format,

statements made during prosecution history cannot impose such a limitation. See *Storage Technologies*, 329 F.3d at 831.

Defendants also direct the court's attention to the specification, Column 11, lines 15-17, which state that "the book format include[s] the actual contents of the book including its cover and the body of the book which *may* consist of stored graphical images of the cover and the text pages of the book stored in *a bit mapped or raster image format*." (emphasis added). The court finds that because this reference uses the word "may," not shall, the reference does not limit the storage of books to a bit mapped format. Proper claim construction does not require that this limitation be read into the claim. *See Storage Tech.*, 329 F.3d at 831.

The court finds that the prosecution history and the specification of the '213 patent do not evidence that Plaintiff surrendered the broad meaning of the term "storing the text of a plurality of books in a computer" so as to require that the text files for books be stored in a bit mapped format.

37. Claim 7, clause 3, recites the language: *storing a plurality of covers for books to be printed in said computer, said covers being stored in a bit mapped format.* The parties do not dispute that this clause requires the covers for the books to be stored in a bit mapped format. Defendants argue, however, that this clause requires that the covers of books to be printed are stored in the same computer as the text of the books to be printed. *See* Doc. 69 at 44. Defendants base their position on their assertion that the patent in this case encompasses only one computer, rather than a network of computers. The court has found above that the '213 patent

does not disavow or relinquish a broad meaning of the term computer to preclude the use of a computer network. Therefore the plain meaning of Claim 7, clause 3, does not require that the covers be stored in the same computer as the text of the books to be printed. Additionally, the specification and prosecution history to not establish that the inventor intended otherwise.

38. The parties do not dispute that "covers" refers to words or designs printed on the cover of a book.

39. Claim 7 recites the language: storing *sales information* relating to said plurality of books in a computer" (clause 4) and "providing a means for a customer to scan said *sales information* (clause 5). Defendants argue that the plain meaning of the phrase "sales information" is "data or facts relating to the exchange of books for money." Defendants argue, however, that this phrase is ambiguous on its face and that reading the specification and prosecution history of the '213 patent is necessary to determine the proper meaning of "sales information." *See* Doc. 69 at 44. Defendants further take the position that the sales information referenced in this clause is promotional in nature and that promotional information, for example, would include a synopsis, information about the author while excluding "ISBN" or "SKU" numbers which would "merely identify a book," rather than promote it. *See* Doc. 69 at 47. Defendants argue that Plaintiff cannot claim that "sales information" means simply "information relating to the books stored in the computer." Additionally, Defendants argue that in overcoming the prior art, the inventor of the '213 patent limited the term sales information. Defendant suggest that a

broad interpretation of "sales information" would result in claim invalidation because "[p]roviding customers identifying information about a product is inherent in any sales situation." Doc. 69 at 47. Plaintiff argues that "sales information" means information relating to books stored in a computer which would aid in making a selection of a book. *See* Doc. 68 at 27.

Following precedent of the Federal Circuit, the court will first consider the plain meaning of the words in the phrase "sales information." The word "sales" is an adjective modifying the word "information." The dictionary definition of "information" is "1. knowledge derived from study, experience, or instruction; . . . 5. a nonaccidental signal used as an input to a computer or communication system." *Webster's II, New Riverside University Dictionary* (1988). Plaintiff states that the common dictionary definition of "information" is "1. an informing or being informed; esp., a telling or being told of something. . . . 6. any data that can be stored in and retrieved from a computer." Doc. 68 at 27 (citing *Webster's New World Dictionary* (1979). "Sales," as an adjective, is defined as "7. sales. a. activities involved in selling goods or services." *Webster's II, New Riverside University Dictionary* (1988). Plaintiff states that a common dictionary definition of the word "sales" is "5. plural a: operations and activities involved in promoting and selling goods and services." Doc. 68 at 27 (citing *Merriam Webster's Collegiate Dictionary).* These multiple dictionary definitions of "information" and "sales" should be construed in a manner which is consistent with their use in the intrinsic record. *See Texas Digital*, 308 F.2d at 1203. The court finds, therefore, that the common meaning of "sales information,"

in the context of Claim 7, clause 4, is data stored in a computer which is involved in the promoting and selling of a book.

40. The court notes that the specification of the '213 patent discloses the use of the term "promotional" to modify "sales information."[4] For example, the '213 patent states under Summary of Invention, Column 1, line 59-63, that "[t]he system includes the capability of computer storage of tens of thousands of different books, . . . along with both textual and color pictorial promotional sales information regarding each of the stored books." Also, the '213 patent states at Column 6, lines 15-20, that:

> The book data that is employed by the system is comprised of three elements: (a) the textual contents of the book, (ie:, text pages, index page, table of contents, Library of Congress notice, fly sheets, etc); (b) descriptive material such as a synopsis, plot outline, author's biographical summary, etc., (i.e., those textual materials that are promotional in nature); and (c) color cover graphics.

In support of their position, Defendants point to prosecution history. In particular they refer to a statement by

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4. The parties do not address the meaning of the term "promotional." The court notes, however, that a dictionary definition of the term "promotion" includes "4. advertising, publicity, and public relations – promotional adj." *Webster's II, New Riverside University Dictionary* (1988).

Plaintiff in the Reexamination Application. This statement is as follows:

> This Interpress book has no disclosure or suggestion of storing sales information (i.e., the "descriptive material" described on column 6, lines 18-21) relating to the books stored there within on the computer, and it has no means for allowing a customer (user) to select which book (or a portion thereof) using such sales information. There is no disclosure of any means for binding the text and the cover of a book reproduced by the system together. Contrary to Mr. Fleischer's assertion that the "file name" of the documents used with the Interpress language constitutes "sales information" within the scope of the claims of '213 patent (see Column 6, lines 18-21 of the '213 patent), it is pointed out that there is no disclosure of the sales information or descriptive material.

Joint Ex. 1 at FH470.

Defendants further cite a statement made by the Examiner in response to the Reexamination Application. Upon confirming the patentability of Claims 7 and 8, the Examiner stated:

> The patentability of claims 7 and 8 are confirmed. The prior art does not disclose or suggest the storing of sales information for customer review which provides descriptive information relating

> to stored books in a computer in combination with the customer selection of books or portions of books, the transfer of information to a printer to print the text of selected books on pages, and the binding of the pages into a finished book including the reproduction of graphical information for the book cover.

The court finds that the above discussed prosecution history clarifies that the Examiner understood that "sales information" was broader than promotional information and that it included descriptive information which would aid in making a sale to the customer, such as the price of the book. The court first notes that this prosecution history reveals that the sales information referenced in Claims 7 and 8 was a factor in determining the patentability of those claims over the prior art. While the Examiner considered that the sales information referenced in the '213 patent included descriptive information, the Examiner's statement does not reference a limitation of sales information in the '213 patent to that which is promotional.

Likewise, the specification does not limit the sales information provided to that which is promotional, but rather states it may include such information. The court finds that the specification suggests that the inventor of the '213 patent intended that the term "sales information" was general in nature; that it could include information such as Library of Congress notice, fly sheets, synopsis, plot outline, or author's biographical summary; but that these are just examples of

the sales information included in the data employed by the system.[5] The court also finds that the specification and the prosecution history of the '213 patent do not establish that the inventor intended the phrase "sales information" to have other than its common meaning. The court further finds that dictionary definitions, when considered with the specification and the prosecution history, establish that the term "sales information" as used in Claim 7 would be understood by

5. While not relying on this exhibit, the court notes that Plaintiff's Exhibit 20, LS-6892, an internal memorandum of Defendants, states:

> "Sales information" is defined in the '213 Patent as including general information, such as a list of best sellers, a synopsis, a plot outline, an author's biographical summary or specific information about individual books in which the consumer may have some interest. It is conceivable that information provided in the LSI book printing process, for instance, a brief summary or an abstract, from which a customer can review to make an ordering decision, may be viewed as similar in nature to the "sales information" in claim 8.
>
> Moreover, it is conceivable that an argument may be set forth which further broadens the scope of "sales information", as such terms is understood in the '213 Patent. For example, sales information may be interpreted to include any information which will aid in making a sale to a customer, including the price of a book. To that end, even if the LSI process only provides, for instance, the price or title of the book in its digital database from which a customer can review to make an ordering decision, we believe there may be an argument that the LSI book printing process does utilize sales information in the manner set forth in claim 8 of the '213 patent.

persons skilled in the art as having a broad meaning and to include information beyond that which Defendants contend is promotional. As such, sales information may include price, SKU and/or ISBN number.

41. Claim 7, clause 5, discloses "*providing a means for a customer to scan said sales information.*" The parties agree that "providing" has its usual and customary meaning, including to supply for use; contribute, furnish. The court will next consider whether this claim is a "means-plus-function" limitation under 35 U.S.C. § 112, ¶ 6. Plaintiff takes the position that is not clear whether this claim is subject to ¶ 6, and Defendants assert that the claim is a means-plus-function limitation.

Because the claim uses the word "means," the court will start with the presumption that "'that the inventor used the term advisedly to invoke the statutory mandate for means-plus-function clauses.'" *Altiris*, 318 F.3d at 1375 (quoting *Sage Products*, 126 F.3d at 1427). To determine that this is a means-plus-function limitation, the court must next determine the function identified in the language of the claim. *See id.* (citing *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250 (Fed. Cir. 1999)). After identifying function, the court must then determine if the claim includes structure sufficient to perform this function. If sufficient structure is included, then the claim does not impose a means-plus-function limitation. On the other hand, if it does not, the court must turn to the specification to identify the corresponding structure that provides the means for accomplishing this function. *See id.*; *Chiuminatta Concrete Concepts v. Cardinal Indus.*, 145 F.3d 1303, 1308 (Fed. Cir.

1998). To be corresponding structure, the structure in the specification or prosecution history clearly must be linked or associated with the function recited in the claim. *See id.* (citing *B. Braun*, 124 F.3d at 1424. The parties do not dispute that the recited function is a means for a customer to scan said sales information.

42. Arguably "scan" represents structure. Merely pointing out that the relevant structure will scan, however, is insufficient because it is "so broad as to give little indication of the particular structure used here and is described only functionally." *Altiris*, 318 F.3d at 1375. The court finds that the claim does not provide for sufficient structure to perform the entirety of the recited function; something else is needed. Therefore, to determine the structure which is disclosed for a customer to scan sales information the court must determine if the specification identifies corresponding structure.

43. Examination of the specification discloses an embodiment for the customer to scan sales information: "a customer module (e.g., a customer kiosk)." '213 patent, Col. 1, lines 63-64. The '213 patent permits the customer to access the sales information on a display screen in a customer module. *See* '213 patent, Col. 1, lines 63-65. Additionally, the specification states that "[t]he electronic kiosks are utilized by the consumer for book browsing and selection" Col. 9, line 62. Also, the specification states that "[a]ll customer actions are conducted within customer console. . . . The transactions available to the customer include, but are not limited to: (a) display of current best sellers, . . . ; (b) searching by title or author, . . . ; (c) browsing

through descriptive material provided by the publisher." Col. 7, Line 24-47.

The specification further describes the customer module as follows:

> Customer module includes a customer console with a Super VGA display monitor with touch panel, a pair of powered audio speakers, an industry standard extended keyboard, and a credit card reader. The customer module also includes a client computer and a wireless Local Area Network user module for network connection to the master module. Customer consoles are preferably provided with a customer seat and an ambient light level suitable for viewing the display monitor.
>
> The customer module display monitor with touch panel has a diagonal measurement of not less than 17", with a display resolution of 1024x768 pixels, and a touch panel sensitivity of not less than 1 part in 1024. The display monitor with touch panel is used by the customer to browse the book catalog. Graphical simulations of objects and books are displayed in conjunction with promotional material and may be accompanied with full motion video. The simulations are manipulated by the customer and via the integral touch panel. The extended keyboard is not used by the customer but is included for use by field support and maintenance personnel. The credit

card reader is used by the customer for unassisted sales authorization.

Col. 13, lines 54-67, Col. 14, lines 1-9.

Upon describing the kiosks, the specification also states:

> The electronic kiosks are utilized by the consumer for book browsing and selection which is done via a touch screen while viewing graphical simulations of actual objects and books including covers, flyleaves, table of contents, and elements of the book body. Full motion video and stereo audio programs of background MIDI music and digitized speech and sounds describing the books are also presented in synchronization. The data comprising the graphical simulation and, video and audio program are stored locally within the data storage element of the kiosk, thus implementing a local cache component of a distributed, hierarchical storage system when combined with the master module's internal hierarchical storage subsystem. The kiosks are interconnected to the master module via a wireless local area network (LAN) to simplify placement.

Col. 9, lines 62-67, Col. 10, lines 1-9.

Structure disclosed in the written description is "corresponding" to the claimed means under § 112, only if the structure is *clearly linked* by the written description or the prosecution history to the function recited in the claim.

See Unidynamics Corp. v. Automatic Prods. Intl, Ltd., 157 F.3d 1311, 1319 (Fed. Cir. 1998); *B. Braun*, 124 F.3d at 1424. Here, the structure that is clearly linked in the specification to the function of a customer to scanning sales information is the individual customer computer module. The court finds, therefore, that the customer computer module is corresponding structure referenced in the claim limitation "providing a means for a customer to scan said sales information."

Defendant suggests that not just any computer monitor will suffice and that a computer monitor must be consistent with the detail provided in the specification. The court finds that the specification describes a customer computer module as the corresponding structure, and that, therefore, the structure for scanning sales information is limited to this structure. All elements of the customer computer module as described in the specification are included in this limiting structure, with the exception of those elements which are referenced as preferable. Thus, the limiting structure for scanning sales information does not include a customer seat and ambient light.

44. The court is mindful that Claim 7 (as well as Claim 8) is a method claim. Plaintiff suggests that the limitation of Claim 7, clause 5, is more appropriately referred to as a "step-plus-function" limitation than a means-plus-function limitation. In support of this position, Plaintiff cites § 112, ¶ 6, and its statement that "[a]n element in a claim for combination may be expressed as a means or *step* for performing a specified function without the recital of

structure, material or acts in support thereof." (emphasis added). Indeed, § 112, ¶ 6, references steps as well as means.

In *O.I. Corporation*, 115 F.3d at 1582-83, upon addressing the applicability of § 112, ¶ 6, to method claims, the Federal Circuit stated:

> This statutory provision clearly applies to claims for a combination. It is well established of course that, in combinations that are apparatus claims, means for performing a specified function are subject to this paragraph when they lack definite structure or material. . . . However, '[t]he word "combination" in this paragraph includes 'not only a combination of mechanical elements, but also a combination of ... *steps in a process claim*. (citation omitted).
>
> The statute of course uses terms that might be viewed as having a similar meaning, namely, steps and acts. It refers to means and steps, which must be supported by structure, material, or acts. It does not state which goes with which. The word "means" clearly refers to the generic description of an apparatus element, and the implementation of such a concept is obviously by structure or material. We interpret the term "steps" to refer to the generic description of a process, and the "acts" to refer to the implementation of such steps. This interpretation is consistent with the established correlation between means and structure. In this paragraph, structure and material go with means,

> acts go with steps. Of course, as we have indicated, section 112, ¶ 6, is implicated only when means *plus function* without definite structure are present, and that is similarly true with respect to steps, that the paragraph is implicated only when steps *plus function* without acts are present. The statute thus in effect provides that an element in a combination method or process claim may be recited as a step for performing a specified function without the recital of acts in support of the function. (emphasis in document).

Thus, the Federal Circuit has clarified that step-plus-function limitations are allowed in method claims. The court finds, however, that neither Claim 7, nor Claim 8, nor their corresponding specification, disclose acts that implement steps in a process of providing the means for a customer to scan (Claim 7) or to review (Claim 8) said sales information. Therefore, these claims should not be characterized as imposing a step-plus-function limitation but rather means-plus-function limitations.

"To determine whether a claim limitation is met literally, where expressed as a means for performing a stated function, the court must compare the accused structure *with the disclosed structure*, and must find equivalent *structure* as well as *identity* of claimed *function* for that structure." *Pennwalt*, 833 F.2d at 934. (emphasis in document). Thus, upon making the determination of whether the alleged infringing device performs exactly as the claimed device, the court must consider not only the means specified in the written description, but it must determine in its claims

analysis what would constitute "equivalents thereof." *O.I. Corp.*, 115 F.3d at 1583. "[U]nder § 112 every structure disclosed in the specification and its equivalents should be considered."[6] *Altiris*, 318 F.3d at 1377. Of course, such equivalents must have the identical function, which in regard to Claim 7, clause 5, would be permitting the customer to visually review the sales information which has been stored in a computer. Such equivalents include any computer monitor that gives a customer access to sales information that has been stored in a computer as defined above, and any user input device for a customer to perform this function. As this is means-plus-function claim, the limitations of the claim are those described in corresponding structure or its equivalent. The specification describes the user input device as follows: the computer screen "displays a preprogrammed graphics and text message selected by the system owner and invites the customer to *touch* any part of the screen to initiate dialogue." '213 patent, Col. 7, lines 27-29 (emphasis added). *See also*, Col. 15, line 62. Thus, the '213 patent provides that information can be accessed by touching the screen or by use of structure which is the equivalent thereof.

45. Claim 7, clauses 5 and 6, use the term "*customer.*" Defendants argue that the court should narrowly construe this term to mean only a retail customer, not any type of customer. In accordance with the methodology prescribed

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6. However, "[i]f the required function is not performed exactly in the accused device, . . . section 112, paragraph 6, equivalency is not involved. Section 112, paragraph 6, plays no role in determining whether an equivalent function is performed by the accused device under the doctrine of equivalents." *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934 (Fed. Cir. 1987).

by *Texas Digital*, the court presumes that this term has its ordinary and customary meaning which would readily be understood by those skilled in the art. "Customer" is defined as "one who buys goods or services" (*Webster's II, New Riverside University Dictionary* (1988), or "one that purchases a commodity or service (*Merriam-Webster's Collegiate Dictionary*). To impose the term retail on the definition of customer would represent the random assignment of an adjective and, as such, would impose a limitation on an ordinary dictionary definition.

Defendants argue that throughout the patent specification, use of the word "customer" is in the context of the person who sits at the customer console in a retail store and that customer is used interchangeably with consumer.[7] *See* Doc. 69 at 55. Significantly, the first paragraph of the Summary of Invention states:

> The present invention comprises a computer based book manufacturing system for the high speed reproduction of a single copy of a book. *The system may be utilized in many environments, but it is especially well suited for direct retail consumer sales....* A customer module (e.g., a customer kiosk) permits the *consumer* to access the promotional sales information on a display screen which may include general information such as a list of best sellers or specific information

7. "Consumer" is defined as: 2. a person who acquires goods or services." *Webster's II, New Riverside University Dictionary* (1988).

> (e.g., a sample chapter) about individual books in which the *consumer* may have some interest. (emphasis added).

'213 patent, Col. 3, lines 63-65.

The Summary of Invention also references an object of the invention as providing "a system which enhances the *consumer*'s chances of finding and procuring a book which may not otherwise be available" (Col. 3, lines 34-36) (emphasis added). Additionally, the specification states as an object of the invention alleviating problems associated with operation of a retail store (Col. 3, lines 15-24). The specification also discloses use by libraries.

The specification for the '213 patent suggests that its best use at the time the patent was issued was "direct retail customer sales." However, the specification acknowledges other environments. "[P]articular limitations or embodiments appearing in the specification will not be read into claims." *Locite Corp.*, 781 F.2d at 867. The warnings of the Federal Circuit preclude this court from limiting Claims 7 and/or 8 to the preferred embodiment of direct retail customer sales. *See Texas Digital*, 308 F.3d at 1204. The court concludes that the specification of the '213 patent does not use words in a manner which is clearly inconsistent with the ordinary meaning reflected by the word "customer." The court further finds that the specification's interchangeable use of the term consumer does not overcome the presumption that the ordinary definition of the term customer is applicable. Significantly, the words are defined almost identically with the only difference being the use of "buys," "purchases," or

"acquires." Thus, the court finds that "customer," as used in Claims 7 and 8, is not limited to a retail customer.

46. The parties agree that the scanning of Claim 7, clause 5, is done by a customer. Defendants argue that this scanning cannot be performed by a clerk because a clerk is not a customer. *See* Doc. 69 at 52. The court finds that the plain meaning of the claim does not preclude a clerk from scanning on behalf of the customer, whether that customer is a retail or non-retail customer. The parties do not suggest nor does the court find that the specification or the prosecution history are inconsistent with this interpretation.

47. Claim 7, cause 6, recites: *enabling the customer to select which book or a portion of a plurality of books.* Defendants argue that this claim should be limited to a method where the customer's selection of a book is made possible by the customer's use of the sales information. *See* Doc. 69 at 56. In support of its position, Defendants cite the prosecution history, including a statement by Plaintiff's attorney pursuant to an attempt to distinguish the XPS reference. Plaintiff's attorney did state in Plaintiff's Reexamination Request that:

> There is no disclosure or suggestion that [the XPS system] can store a plurality of books in a computer, allow a user to select one (or a portion of several of the stored books) from descriptive information (as described at Column 6, lines 18-21 of the '213 patent) which is stored in the computer, transferring the digital data corresponding to the selected book to a printer

> for the printing of both the text pages and the cover graphics of the selecting book, and then for binding of the book.
>
> Further, this XPS 700 reference has no disclosure of storing sales information (i.e., the "descriptive material", as described in column 6, lines 18-20 of the '213 patent) which a user can use to choose a book to be printed. It discloses no means for allowing a customer or user to select which book (or portion or a book) to be printed using such sales information stored in the computer. Lastly, this reference does not disclose or suggest binding the reproduced text and cover graphics together into a book.

Joint Ex. 3 at FH 465.

Indeed the Examiner stated, upon reexamination, that the prior art did "not disclose or suggest the storing of sales information for customer review which provides descriptive information relating to stored books in a computer in combination with the customer selection of books or portions of books." *See* Joint Ex. 4 at FH 555. The court finds that the plain meaning of "enabling a customer to select" suggests that a customer is enabled to make a selection by use of sales information, but it does not require that selection be made possible by sales information provided by the invention. The court further finds that the specification and the prosecution history of the '213 patent do not establish that the inventor intended these terms to have other than their common meaning.

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48. Claim 7, clause 6, includes the terms : *which book or a portion of a plurality of books.* The parties do not dispute that "a portion of a plurality of books" means that as an alternative to selecting a book, a customer may select a portion of one or more books.

49. Claim 7, clause 7, recites: *commanding a computer to print the text of said selected books and a cover in response to said selection.* The parties do not dispute that this phrase means giving the instruction to a computer to begin the steps necessary to print the text and cover of the selected book.

Defendant argues that "in response to" imposes a temporal requirement of immediacy on the claim. Defendants argument attempts to impose the general language of the preamble, "high speed manufacture," to this claim term. As found above, the preamble does not limit the claim. The court finds that the phrase "in response to" should be given its plain or ordinary meaning; that the specification and prosecution do not suggest a basis upon which to conclude that the inventor meant otherwise; and that the phrase "in response to" does not require immediacy or any other temporal limitation following the customer's selection of a book or excerpt from a book or books.

50. Claim 7, clause 8, recites: *retrieving the text of said selected books from a computer.* The parties agree that this clause should be given its ordinary meaning, although Defendants assert that the plain and ordinary meaning references retrieving from computer storage files which are stored in a bit mapped format. See Doc. 68 at 43; Doc. 69 at 59. The court incorporates its discussion above of the

whether the claims of the '213 patent reference a bit mapped format and its discussion of the '213 patent's reference to a computer. Claim 7, clause 8, would, therefore, be understood to mean that the text for the selected book is retrieved from a computer. The text need not be stored in a bit mapped format.

51. Claim 7, clause 9, includes the terms: *printing the text of said selected books on paper pages.* At issue is the meaning of "paper pages." Defendants argue that by choosing the term "paper pages" the patentee of the '213 patent chose to require the text to be printed on sheets of paper, as opposed to being printed on continuous rolls or any other of a variety of forms of paper.[8] *See* Doc. 69 at 59.

Texas Digital requires the court to apply the presumption that the claim terms mean what they say. Neither the claims nor the specification references the form of paper used in the invention, although the claims and the specification disclose that ultimately pages of a book are produced. The court finds that "paper pages" does not limit the claim to sheets of paper, although the book which is produced by the process must be comprised of pages as opposed to rolls.

52. Claim 7, clause 10 recites "*binding said paper pages together to form said selected one of said books.*" Plaintiff argues that this claim term should be given its plain and

8. Plaintiff asserts that the reason Defendants make this argument is that deposition establishes that Defendants' text printers print the text on long webs of paper and then the text pages are cut from the web, and that Defendants' construction of "paper pages" would avoid literal infringement. *See* Doc. 68 at 44.

customary meaning that paper pages are bound together to form a book. *See* Doc. 68 at 44-45. Defendants agree but suggest that, because this clause does not mention the cover, it is not necessary to bind the cover of the book with the pages of the book. The court agrees that the plain language of the claim does not require that the paper pages of the book be bound with the cover. The specification does not suggest otherwise.

54. ***CLAIM 8***: Claim 8 of the '213 patent states the following, in its entirety:

> *A method of high speed manufacture of a single copy of a book comprising the steps of:*
>
> > *(2) storing the text of a plurality of books in a computer,*
> >
> > *(3) storing sales information relating to said plurality of books in a computer,*
> >
> > *(4) providing means for a customer to visually review said sales information,*
> >
> > *(5) commanding a computer to print the text of a selected one of said books in response to a customer's selection,*
> >
> > *(6) retrieving the text of said selected one of said books from a computer,*
> >
> > *(7) printing the text of said selected one of said books on paper pages,*

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(8) binding said paper pages together to form said selected one of said books,

(9) storing graphical information corresponding to the cover of each of said books,

(10) commanding a computer to reproduce said graphical information on a book cover,

(11) and binding said paper pages together with said cover therearound.

54. The preamble of Claim 8 recites: *A method of high speed manufacture of a single copy of a book comprising the steps of.* This preamble is identical to the preamble of Claim 7. The parties do not dispute that the preamble of Claim 8 should be construed in the same manner as the preamble to Claim 7. *See* Joint Statement of Claim Construction ("Joint Statement") at 4. The court, therefore, interprets the preamble of Claim 8 in the same manner as the corresponding language of the preamble of Claim 7.

55. Claim 8, clause 2, recites: *storing the text of a plurality of books in a computer.* This claim is identical to Claim 7, Clause 2. The parties do not dispute that the language of this claim should be construed in the same manner as Claim 7, clause 2. *See* Joint Statement at 4. The court, therefore, interprets Claim 8, clause 2, in the same manner as the corresponding language of Claim 7, Clause 2.

56. Claim 8, clause 3, recites: *storing sales information relating to said plurality of books in a computer.* This claim is identical to Claim 7, clause 4. *See* Joint Statement at 4. The parties do not dispute that the language of this claim should be construed in the same manner as Claim 7, clause 4. The court, therefore, construes Claim 8, clause 3, in the same manner as the corresponding language of Claim 7, clause 4.

57. Claim 8, clause 4, recites: *providing means for a customer to visually review said sales information.* The parties agree that, with the exception of the terms "visually review" rather than "scan," the language of this claim is identical to Claim 7, clause 5. *See* Joint Statement at 4. The court, therefore, construes Claim 8, clause 4, in the same manner as the corresponding language of Claim 7, clause 5.

58. Claim 8, clause 5, recites: *commanding a computer to print the text of a selected one of said books in response to a customer's selection.* Claim 8, clause 5, and Claim 7, clause 7, are similar except that Claim 8, clause 5, includes the phrase "selected one of said books" and references a "customer's" selection. *See* Joint Statement at 4. Defendants' Memorandum maybe interpreted to suggest that the phrase "selected one of said books" means that the computer is commanded to print only one copy of a book, not multiple copies. The common definition of "one" is "1. Being a single unit." *Webster's II New Riverside University Dictionary* (1988). In the context of this claim, "one" means that the computer is commanded to print one book at a time. "One" does not mean that the computer is directed to print only one

copy of that book; it may be commanded to print multiple copies. The court finds that the specification or prosecution history do not indicate otherwise. Thus, the court construes Claim 8, clause 5, in the same manner as the corresponding language of Claim 7, clause 7.

59. Claim 8, clause 6, recites: *retrieving the text of said selected one of said books from a computer.* The parties agree that the wording of this claim is slightly different than Claim 7, clause 8, as this claim includes the words "one of said" while Claim 7, clause 8, does not. *See* Joint Statement at 4. Defendants' Memorandum maybe interpreted to suggest that this phrase means that only one copy of a book, not multiple copies, is retrieved from the computer. The court interprets "one of said" in Claim 8, clause 6, in a manner consistent with its interpretation of that clause in Claim 8, clause 5. The court further interprets Claim 8, clause 6, in the same manner as the corresponding language of Claim 7, clause 8.

60. Claim 8, clause 7, recites: *printing the text of said selected one of said books from a computer.* The parties agree that the wording of this claim is slightly different than Claim 7, clause 9, in that Claim 8, clause 7, includes the phrase "one of said". *See* Joint Statement at 4. Defendants' Memorandum may be interpreted to suggest that this phrase means that only one copy of a book, not multiple copies, is selected from the computer. The court interprets "one of said" in Claim 8, clause 7, in a manner consistent with its interpretation of that phrase in Claim 8, clause 5. The court further interprets Claim 8, clause 7, in the same manner as the corresponding language of Claim 7, clause 9.

61. Claim 8, clause 8, recites: *binding said paper pages together to form said selected one of said books.* The parties agree that the language of this claim is identical to Claim 7, clause 10. *See* Joint Statement at 4. The court, therefore, construes Claim 8, clause 8, in same manner as the corresponding language of Claim 7, clause 10.

62. Claim 8, clause 9 recites: *storing graphical information corresponding to the cover of each of said books.* The parties agree that the language of this claim is similar to Claim 7, clause 3. *See* Joint Statement at 4. The parties do not dispute that the plain meaning of this claim requires that the graphical information depicted on the cover of each of the computer-stored books must also be stored on a computer. Defendants, however, argue that Claim 8, clause 9, inherently requires that this graphical information be stored on the computer in a bit mapped format . The court has found in regard to Claim 7, clause 3, that information regarding book covers must be stored in a bit mapped format. Claim 8, clause 9, however, which also references book covers, does not recite a bit mapped format, as does Claim 7.

In regard to conflicting language in two claims of a patent, the Federal Circuit has stated:

> It is well established that, generally, patent terms are given their plain, ordinary, or accustomed meaning to one of ordinary skill in the relevant art. *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1341, 60 USPQ2d 1851, 1854 (Fed.Cir.2001). Under the doctrine of claim differentiation, "each claim in a patent is

presumptively different in scope." *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233, 57 USPQ2d 1679, 1685 (Fed.Cir.2001). Although claim differentiation is not a "hard and fast rule of construction," it is applicable where "there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims." *Id.* Moreover, claims are not necessarily and not usually limited in scope simply to the preferred embodiment. *See Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1370, 65 U.S.P.Q.2d 1865, 1870 (Fed.Cir.2003) (holding that the district court improperly read limitations from the specification into the claims). Thus, when a claim term is expressed in general descriptive words, it typically will not be limited to a numerical range that may appear in the written description as referring to a preferred embodiment or in other, narrower claims. *Modine Mfg. Co. v. U.S. Intl. Trade Commn.*, 75 F.3d 1545, 1551, 37 USPQ2d 1609, 1612 (Fed.Cir.1996). *RF Delaware, Inc. v. Pacific Keystone Tech., Inc.*, 326 F.3d 1255, Fed. Cir. 2003) *(RF Delaware).*

In *RF Delaware* the Federal Circuit found that the district court erred where it construed one claim as including the limitation of another claim. Upon so holding, the court said that to do so would render redundant or meaningless the

limitation of the claim which specifically included the limitation. The Federal Circuit further noted that:

> A basic claim construction canon is that one may not read a limitation into a claim from the written description. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248, 48 USPQ2d 1117, 1120 (Fed.Cir.1998). Although one may look to the written description to define a disputed term already in a claim limitation, "the resulting claim interpretation must, in the end, accord with the words chosen by the patentee to stake out the boundary of the claimed property." *Id.* Here, to the extent there is any dispute regarding the plain meaning of the term "filter bed," to interpret it as requiring a filter layer, a flocculation layer, and a transitional layer runs afoul of the patent boundaries expressly set by the patentee with different claims.

Id.

The court first notes that, in the matter under consideration, Claim 8 is not a dependent claim. Thus, under the doctrine of claim differentiation, Claim 8 "is presumptively different in scope" from Claim 7, and it cannot be presumed that because Claim 7, clause 3, includes the limitation of storing the book covers in a bit mapped format that Claim 8, clause 9, likewise includes such a limitation. *RF Delaware*, 326 F.3d at 1263. The court notes, moreover, that the prosecution history and the specification of the '213 patent do not suggest that Claim 8, clause 9,

should be given other than its ordinary meaning. The court finds, therefore, that Claim 8, clause 9, does not require that the graphical information for the book covers be stored in a bit mapped format. Absent this exception, the court interprets Claim 8, clause 9, in the same manner as Claim 7, clause 3.

63. Claim 8, clause 10, recites: *commanding a computer to reproduce said graphical information on a book cover.* The parties agree that the language of this claim is similar to part of Claim 7, clause 7, although Defendants argue that the graphical information referenced in Claim 8, clause 10, must be in a bit mapped format. The court has found in regard to Claim 7 that information regarding book covers must be stored in a bit mapped format. Claim 8, clause 10, however, does not recite a bit mapped format, as does Claim 7's reference to the storage of covers. For the reasons stated above in regard to Claim 8, clause 9, the court finds that Claim 8, clause 10, does not require that graphical information corresponding to covers be reproduced in a bit mapped format. The court otherwise construes Claim 8, clause 10, in same manner as the corresponding language of Claim 7, clause 7.

64. Claim 8, clause 11, recites: *binding said paper pages together with said cover therearound.* This claim does not appear in Claim 7. Plaintiff states that this claim term is not in dispute and the claim terms mean what they state, namely that the paper pages are bound together with the cover to form a book. Plaintiff further states that the book text is required to be printed on paper pages and that no particular method of binding is required. Plaintiff further contends that it is not necessary to bind the cover with the pages into the

book, although it could be done. *See* Doc. 68 at 47; Joint Statement at 12.

Defendants assert that the claim means that after the book is printed on paper pages and bound, and after the physical cover is printed, then the cover is bound around the already bound paper pages. Defendants assert that "binding" refers to any kind of binding process that will permanently attach the cover around the already bound paper pages.

The court has addressed the meaning of "paper pages" above, in regard to Claim 7, clause 10, and finds that this interpretation is applicable to Claim 8, clause 11. The parties disagree as to whether Claim 8, clause 11, requires that the cover be attached to the bound book, although they do not elaborate on their positions. The court finds that the plain meaning of Claim 8, clause 11, is that the paper pages and the cover will be bound together, with the cover being bound around the paper pages. The specification does not indicate otherwise. The court finds, therefore, that Claim 8, clause 11, requires that the cover and the paper pages be bound together.

65. To the extent various recitations of the claims are not specifically addressed and defined in this opinion, it is because they are not provided any special meaning by the specification or the prosecution history and are to be given their ordinary meaning as would be understood by one of ordinary skill in the art. Should the ordinary meaning of any such terms come into dispute, the court will issue a further Order of clarification.

Appendix D

66. The parties shall not be permitted to submit evidence or make arguments to the jury advancing an understanding of any so-called ordinary meaning which is inconsistent with the Order of the court.

s/ Mary Ann L. Medler
Mary Ann L. Medler
UNITED STATES MAGISTRATE JUDGE

Dated this 8th day of July, 2003.

APPENDIX E — ORDER OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT DENYING PETITION FOR REHEARING FILED JUNE 20, 2006

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

05-1074, -1075, -1100

ON DEMAND MACHINE CORPORATION,

Plaintiff-Cross Appellant,

v.

INGRAM INDUSTRIES, INC. and LIGHTNING SOURCE, INC.,

Defendants-Appellants,

and

AMAZON.COM, INC.,

Defendant-Appellant.

ORDER

A petition for rehearing en banc having been filed by the Cross-Appellant, and a response thereto having been invited by the court and filed by the Appellant,* and the matter having first been referred as a petition for rehearing to the panel that heard the appeal, and thereafter the petition for rehearing en banc and response having been referred to the circuit judges who are in regular active service,

* The Appellants filed a consolidated response.

Appendix E

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the petition for rehearing en banc be, and the same hereby is, DENIED.

The mandate of the court will issue on June 27, 2006.

FOR THE COURT,

s/ Jan Horbaly
Jan Horbaly
Clerk

Dated: 06/20/2006

(2) Supreme Court, U.S.

06-449 SEP 18 2006

OFFICE OF THE CLERK

No. 06-

IN THE

Supreme Court of the United States

ON DEMAND MACHINE CORPORATION,

Petitioner,

v.

INGRAM INDUSTRIES, INC.,
LIGHTNING SOURCE, INC.,
and AMAZON.COM, INC.,

Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

SUPPLEMENTAL APPENDIX

DAVID B. B. HELFREY
HELFREY, SIMON & JONES
120 South Central Avenue
St. Louis, Missouri 63105
(314) 725-9100

WILLIAM B. CUNNINGHAM
Counsel of Record
MCPHERSON D. MOORE
POLSTER, LIEDER,
WOODRUFF & LUCCHESI
12412 Powerscourt Drive
Suite 200
St. Louis, Missouri 63131
(314) 238-2400

Attorneys for Petitioner

203408

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(800) 274-3321 • (800) 359-6859

US005465213A

United States Patent [19]

Ross

[11] Patent Number: 5,465,213

[45] Date of Patent: Nov. 7, 1995

[54] **SYSTEM AND METHOD OF MANUFACTURING A SINGLE BOOK COPY**

[76] Inventor: **Harvey M. Ross**, 787 Cross Creek Dr., St. Louis, Mo. 63141

[21] Appl. No.: **90,417**

[22] Filed: **Jul. 12, 1993**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 558,759, Jul. 27, 1990, abandoned.

[51] **Int. Cl.**[6] **G06F 19/00**

[52] **U.S. Cl.** **364/468**; 364/401; 270/54; 412/13

[58] **Field of Search** ..... 364/478, 401, 364/402, 403, DIG. 1, DIG. 2; 395/101, 103, 155; 281/15.1; 283/63.1, 67, 117; 412/11-13; 270/54

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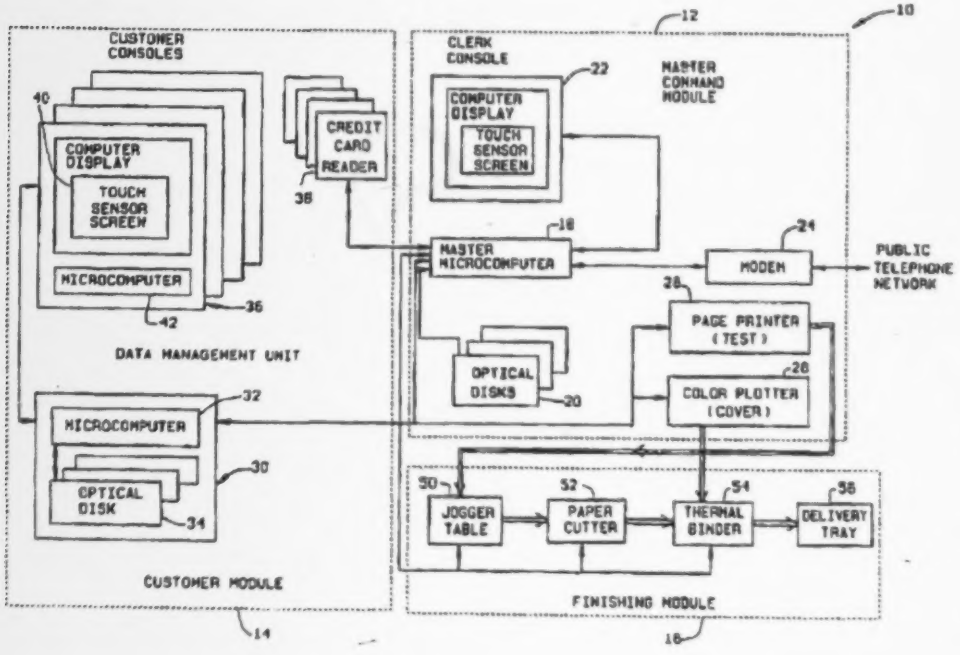
Primary Examiner—Joseph Ruggiero
Attorney, Agent, or Firm—Polster, Lieder, Woodruff & Lucchesi

[57] **ABSTRACT**

A computer based book manufacturing, distributing and retailing system for the high speed reproduction of a single copy of a book is disclosed. The system is especially adapted for direct consumer sales since the manufacture of a selected book can take place at the point of sale. A master module includes a computer having a database of books to be selected, the books preferably being stored in a digital book-description format. Upon selection of a particular book from the database, a single copy of the book (including the text and a color cover) is printed by means of high speed raster printing engines. The system includes a binder for binding the text pages and the cover into a book.

8 Claims, 5 Drawing Sheets



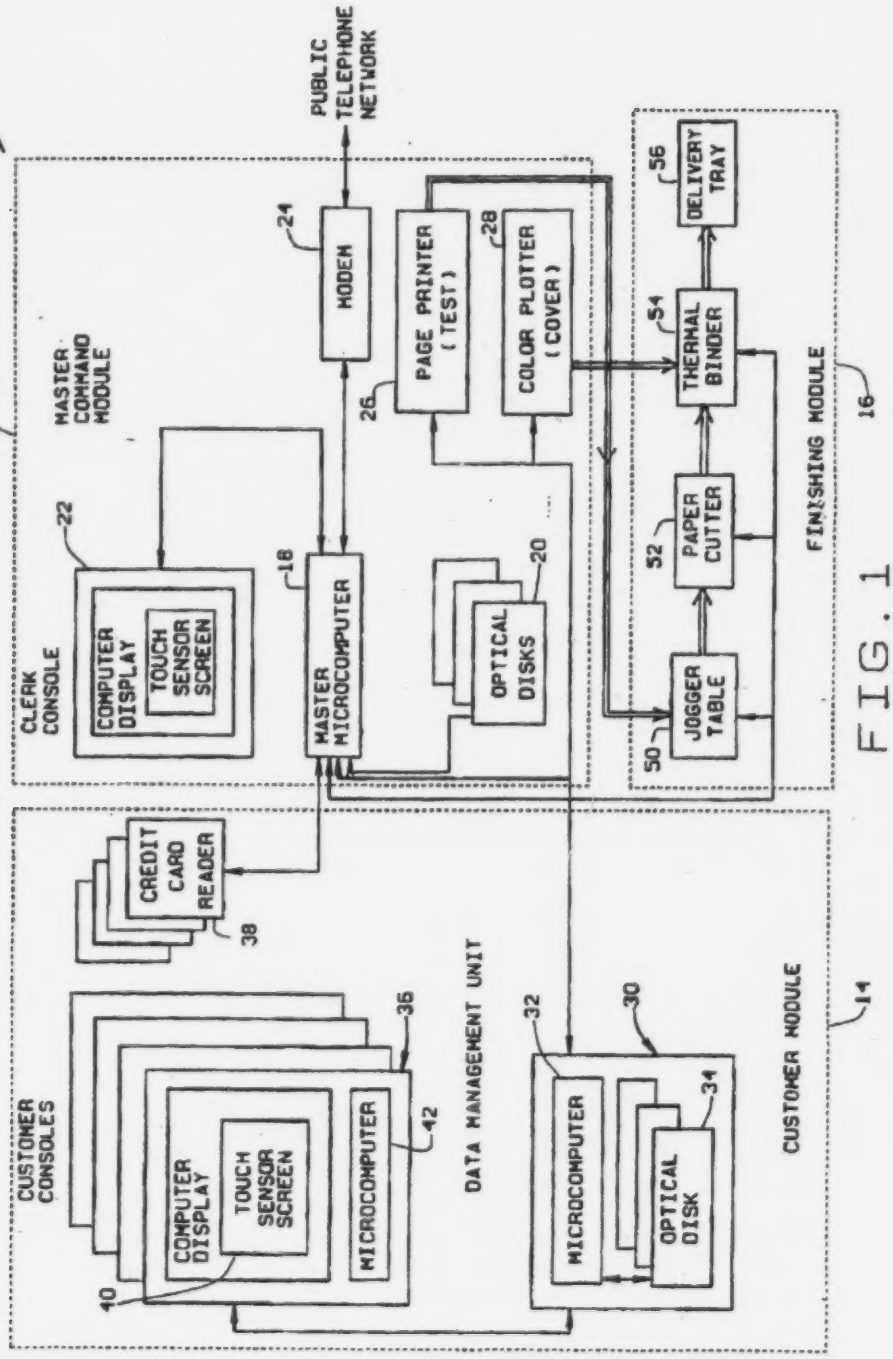

10
PUBLIC TELEPHONE NETWORK
12
MASTER COMMAND MODULE
CLERK CONSOLE
COMPUTER DISPLAY
TOUCH SENSOR SCREEN
22
MASTER MICROCOMPUTER
18
MODEM
24
PAGE PRINTER (TEST)
26
COLOR PLOTTER (COVER)
28
OPTICAL DISKS
20
FINISHING MODULE
16
DELIVERY TRAY
56
THERMAL BINDER
54
PAPER CUTTER
52
JOGGER TABLE
50
CREDIT CARD READER
38
CUSTOMER CONSOLES
COMPUTER DISPLAY
TOUCH SENSOR SCREEN
MICROCOMPUTER
42
36
10
DATA MANAGEMENT UNIT
MICROCOMPUTER
32
OPTICAL DISK
34
30
CUSTOMER MODULE
14

FIG. 1

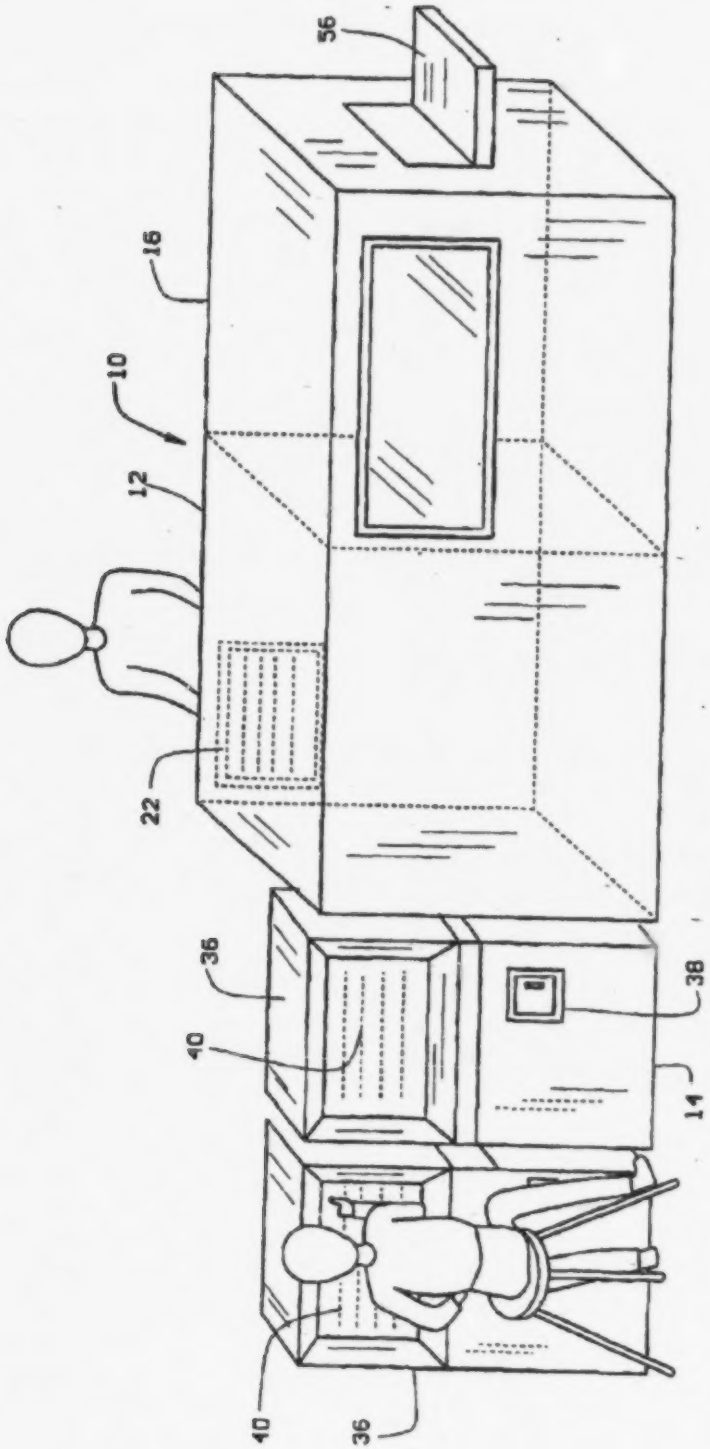


FIG. 2

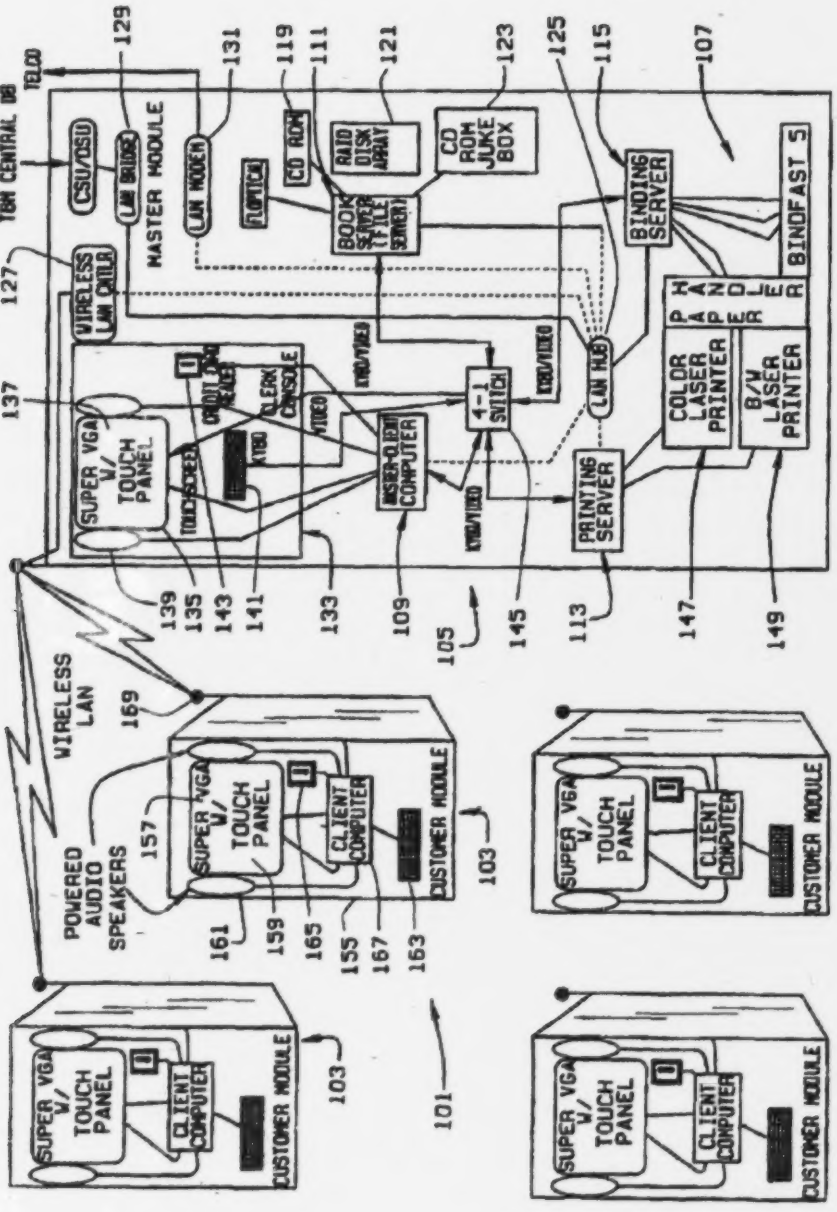

WAN ACCESS TO TBM CENTRAL DB
TELCO
CSU/DSU
LAN BRIDGE
MASTER MODULE
LAN HUB
FLOPTICAL
CD ROM
RAID DISK ARRAY
CD ROM JUKE BOX
BOOK SERVER (FILE SERVER)
BINDING SERVER
BINDFAST S
WIRELESS LAN CNTLR
PHAPOLER
COLOR LASER PRINTER
B/W LASER PRINTER
LAN HUB
PRINTING SERVER
4-1 SWITCH
CLERK CONSOLE
MASTER CLIENT COMPUTER
SUPER VGA W/ TOUCH PANEL
CLIENT COMPUTER
CUSTOMER MODULE
WIRELESS LAN
POWERED AUDIO SPEAKERS
101
103
105
107
109
111
113
115
119
121
123
125
127
129
131
133
135
137
139
141
143
145
147
149
155
157
159
161
163
165
167
169

FIG. 3

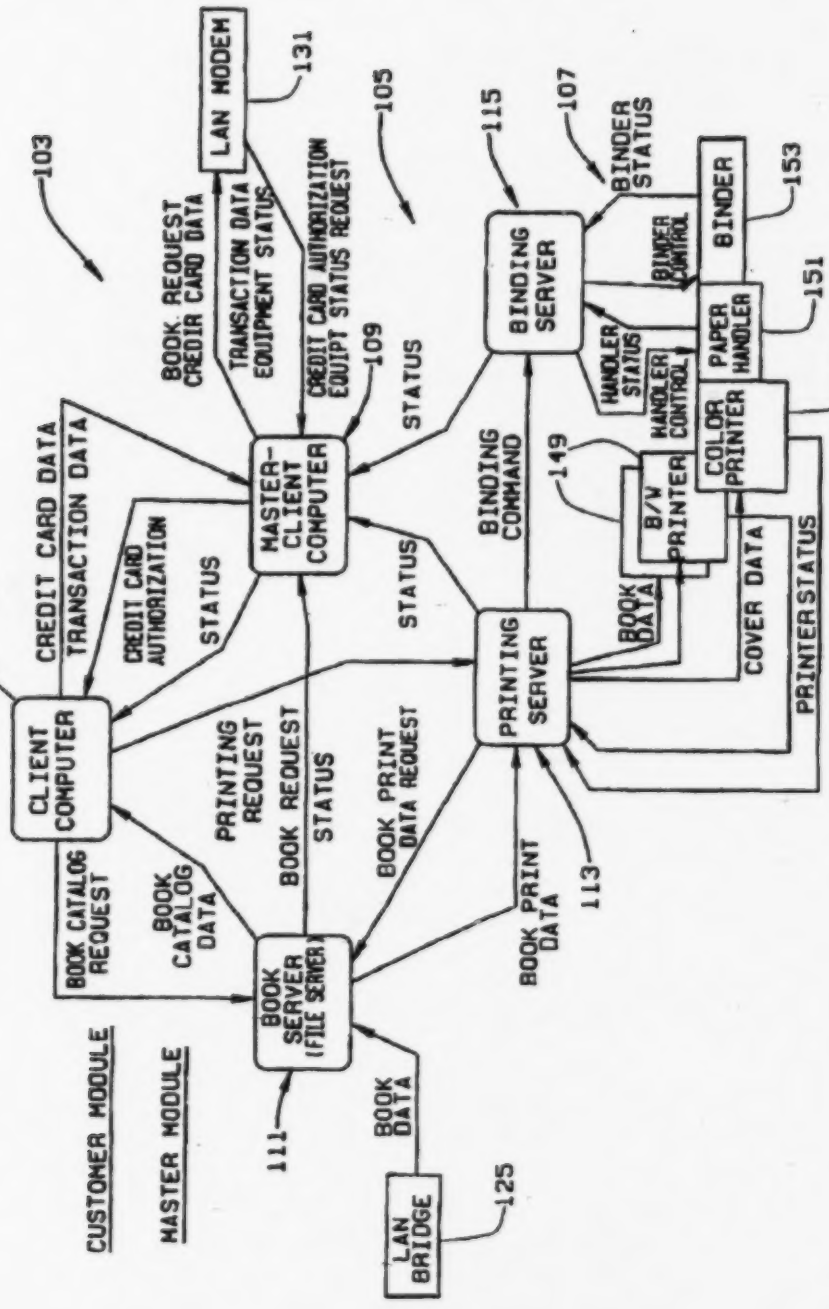

CUSTOMER MODULE
MASTER MODULE
CLIENT COMPUTER
167
CREDIT CARD DATA
TRANSACTION DATA
CREDIT CARD AUTHORIZATION
STATUS
BOOK CATALOG REQUEST
BOOK CATALOG DATA
PRINTING REQUEST
BOOK REQUEST
STATUS
BOOK PRINT DATA REQUEST
BOOK SERVER (FILE SERVER)
111
BOOK DATA
LAN BRIDGE
125
MASTER-CLIENT COMPUTER
103
BOOK REQUEST CREDIR CARD DATA
TRANSACTION DATA EQUIPMENT STATUS
LAN MODEM
131
CREDIT CARD AUTHORIZATION EQUIPT STATUS REQUEST
105
109
STATUS
STATUS
BINDING COMMAND
PRINTING SERVER
BOOK PRINT DATA
113
BINDING SERVER
115
HANDLER STATUS
HANDLER CONTROL
BINDER CONTROL
BINDER STATUS
107
149
B/W PRINTER
COLOR PRINTER
PAPER HANDLER
BINDER
153
151
147
BOOK DATA
COVER DATA
PRINTER STATUS

FIG. 4

BOOK DESCRIPTION FORMAT

BOOK ATTRIBUTES DESCRIPTION

1) Title
2) ISBN Number
3) Classification
4) Abstract
5) Author
   a) Number of Authors
   b) 1st Author
   c) 2nd Author
   d)
   e) Nth Author
6) Editor
   a) Number of Editors
   b) 1st Editor
   c) 2nd Editor
   d)
   e) Nth Editor
7) Subject
   a) Number of Subjects
   b) 1st Subject
   c) 2nd Subject
   d)
   e) Nth Subject
8) Keyword
   a) Number of Keywords
   b) 1st Keyword
   c) 2nd Keyword
   d)
   e) Nth Keyword
9) Publisher
   a) Number of Publishers
   b) 1st Publisher
   c) 2nd Publisher
   d)
   e) Nth Publisher
10) Date of Publication
   a) Number of Publication Dates
   b) Date of 1st Publication
   c) Date of 2nd Publication
   d)
   e) Date of Nth Publication
11) Date of Copyright
   a) Number of Copyright Dates
   b) Date of 1st Copyright
   c) Date of 2nd Copyright
   d)
   e) Date of Nth Copyright

BOOK CONTENTS DESCRIPTION

1) Cover Key
2) Book Body Key
3) Section & Chapters
   a) Number of Chapters
   b) Number of Sections
   c) Chapters in Section 1
   d) Chapters in Section 2
   e)
   f) Chapters in Section N
4) Position of Page Number
5) Title Section
   a) Number of Pages
   b) Starting Page Number
   c) Starting Right/Left
6) Preface
   a) Number of Pages
   b) Starting Page Number
   c) Starting Right/Left
7) Forward
   a) Number of Pages
   b) Starting Page Number
   c) Starting Right/Left
8) Acknowledgments
   a) Number of Pages
   b) Starting Page Number
   c) Starting Right/Left
9) Table of Contents
   a) Number of Pages
   b) Starting Page Number
   c) Starting Right/Left
10) Introduction
   a) Number of Pages
   b) Starting Page Number
   c) Starting Right/Left
11) Section 1
   a) Number of Pages
   b) Starting Page Number
   c) Starting Right/Left
12) Section 2
13)
14) Section N
15) Chapter 1
   a) Number of Pages
   b) Starting Page Number
   c) Starting Right/Left
16) Chapter 2
17)
18) Chapter N
19) Addendum
   a) Number of Pages
   b) Starting Page Number
   c) Starting Right/Left
20) Bibliography
   a) Number of Pages
   b) Starting Page Number
   c) Starting Right/Left
21) Appendices
   a) Number of Appendices
   b) Appendix 1
      1) Number of Pages
      2) Starting Page Number
      3) Starting Right/Left
   c) Appendix 2 Key
   d)
   e) Appendix N Key
22) Index
   a) Number of Pages
   b) Starting Page Number
   c) Starting Right/Left
23) Notes
   a) Number of Pages
   b) Starting Page Number
   c) Starting Right/Left

BOOK CONTENTS

1) Cover
2) Book Body
   (Body of N Physical Pages)

FIG. 5

SYSTEM AND METHOD OF MANUFACTURING A SINGLE BOOK COPY

CROSS-REFERENCE TO A RELATED APPLICATION

This is a continuation-in-part application of U.S. patent application Ser. No. 558,759 filed Jul. 27, 1990, now abandoned.

BACKGROUND OF THE INVENTION

This invention relates to the field of book distribution, storage, manufacturing and retailing. However, while most book manufacturing is accomplished by the production of a large quantity of copies of the same book at one time in a factory setting, the present invention involves a computer-based system for the high speed reproduction of a single copy of a selected book, preferably at the consumer point of purchase.

The distribution of books to consumers is usually accomplished through retail stores and mail order catalogue concerns which purchase multiple copies of thousands of different book titles for resale. In a typical retail book store, the major expenses of doing business are rental of retail store space, employee wages and benefits, and inventory maintenance costs including interest on loans and economic losses created by shoplifting, employee pilferage, damage to inventory from customer handling and those costs incurred by unwanted unsaleable inventory. Further costs include those of physically shipping and handling of books from the manufacturer to the retail store. The retail store owner must always attempt the impossible task of accurately predicting future demand for the myriad of books on the market; while the consumer may be frustrated in trying to find a particular book which because of its age or the nature of its subject matter does not provide enough public demand for the retailer to invest his money or space to carry the book in inventory. A system of ordering such books is available through retail stores; however, the customer must wait usually days to procure a book by this method and sometimes the book may not even be in print and thus unavailable.

Similar problems which exist in the retail sales of records and tapes were addressed in U.S. Pat. No. 4,811,325 where a system is disclosed for producing a customized sound recording in a retail environment while the customer waits. While the problems which exist regarding the retailing of sound recordings are similar to those regarding books, the subject matter of the cited patent does not lend itself to improving the above-identified difficulties relating to the sales of books.

SUMMARY OF THE INVENTION

The present invention comprises a computer based book manufacturing system for the high speed reproduction of a single copy of a book. The system may be utilized in many environments, but it is especially well suited for direct retail consumer sales. The system includes the capability of computer storage of tens of thousands of different books, both the printed text and color graphic cover thereof, along with both textual and color pictorial promotional sales information regarding each of the stored books. A customer module (e.g., a customer kiosk) permits the consumer to access the promotional sales information on a display screen which may include general information such as a list of best sellers or specific information (e.g., a sample chapter) about individual books in which the consumer may have some interest. Such promotional information may include a graphical simulation of the book, descriptive information provided by the publisher, as well as a synopsis and critique of the book by a book reviewer presented in full motion video and stereo sound. The consumer may browse through the introduction, abstracts or selected pages of the book on the computer module screen. If the consumer wishes to purchase a book, he may either pay for the book through a store clerk who will command the system to manufacture a single copy of the book; or the consumer may enter his credit card into the system, and after the purchase transaction is automatically approved and logged through the public telephone network, the system will automatically initiate production of the book.

Upon command, the customer module (or other order placing means) will request a computer in a master module to retrieve the text data from its memory and command the high speed printing of the text pages of the book, preferably precisely in the same format as the original publishers printing. At the same time, the computer retrieves the color graphic data from computer storage for printing of the book cover on a color printer. After printing, the printed pages are automatically transferred first to an optional jogger table for alignment of the text pages, then to an optional paper cutter for cutting the pages down to the proper size for the particular book, next to an automatic thermal binding machine where the text pages are bound into the color book cover. Of course, the pages could be cut prior to alignment if desired. Lastly, the finished book is conveyed to a pick-up tray where the customer has been awaiting the arrival of his book for about three to five minutes.

The present invention may aid in the operation of, for example, public libraries. At present, public libraries must utilize large, expensive buildings to house a vast multitude of costly books, a great number of which are rarely read by the library's constituency. The high speed manufacturing system of the present invention could provide computer browsing capabilities for library users and facilitate physical delivery of a particular book to the user for check-out in an overall cheaper scheme than conventional library systems. Advantages become readily apparent when the manufacturing system of the present invention is placed in a university book store environment. For example, the machine could produce only the boob necessary for the number of students enrolled in a particular class and only those books which the professor has designated for the particular course. As these factors are quickly changeable, the present invention could efficiently provide the correct books and precisely the quantity necessary in an efficient, cost-effective manner.

Also, it is contemplated that systems located in different stores and University libraries could provide further library texts to each other through telephone communication thereby expanding the number of titles available to an even greater extent.

The floor space required for the book manufacturing system according to the invention is somewhat larger than an ordinary office desk plus a computer customer console for each customer sales location or booth; about thirty square feet of floor space. It is contemplated that one to four such customer consoles would be desirable.

Briefly stated, the present invention is a book manufacturing system comprising a main module having computer means for storing and selectively retrieving data corresponding to the text of and information concerning a plurality of books in a digital book-description format. The system

includes means for selecting one of the books, and means for printing the book by means of a high-speed raster printing engine. It will be understood, however, that a rasterized image processor could be used to produce raster images from other formats, such as Adobe's Postscript. The system includes means for binding the pages into a book.

It is therefore an object of the invention to provide a book manufacturing system which is capable of storing data corresponding to the text and color graphical cover of tens of thousands of different books, as well as promotional sales text and color graphics for aiding the consumer in choosing a book for purchase, and facilitate the high speed manufacture of a single copy of a selected book on the immediate premises while the customer waits for a very short time.

It is another object of the invention to provide a system which alleviates or even eliminates the problems set forth above associated with the need to purchase and hold a large inventory of books for a retail store or mail order catalogue concern, to reduce floor space requirements, to provide for reduction of the number of employees needed to run a retail book store, to provide for the reduction of shoplifting costs, employee pilferage costs, damage to inventory and dead inventory costs as well as shipping costs associated with the operation of a retail book store.

It is another object of the invention to permit a user to select portions of different books or other publications, to print these selected portions and to bind these selected portions in a single book form in a timely and cost effective manner.

It is still a further object of this invention to enable the reproduction and binding of a book in an economical and efficient manner.

It is a further object of the invention to provide a system which enhances the consumer's chances of finding and procuring a book which may not otherwise be available.

These as well as other objects and advantages of the present invention will become more apparent upon a reading of the following description of a preferred embodiment thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a system block diagram of a first embodiment of a single copy, high speed book manufacturing system according to the present invention;

FIG. 2 is a semi-schematic representation of the physical design of the embodiment of the invention shown in FIG. 1;

FIG. 3 is a diagrammatic and block diagram view of a second and now preferred embodiment of the book storage, selection and manufacturing system of the present invention including a master module and optional customer module(s) linked to the master module via a wireless LAN network or the like;

FIG. 4 is a data flow diagram of the master module and the customer module of the system depicted in FIG. 3; and

FIG. 5 is a listing to the book description format of the present invention.

Corresponding reference characters depict corresponding parts throughout the several view of the drawings.

DESCRIPTION OF PREFERRED EMBODIMENTS

With reference to the drawings, there is shown a first embodiment of a book manufacturing system according to the principles of the present invention. While FIG. 1 shows in diagrammatic form the flow of information and materials through the system, and FIG. 2 shows a schematic representation of the physical nature of the system, like reference characters will indicate like features of the invention in both of the figures, wherein a first embodiment of the book manufacturing system of the present invention is represented generally by the numeral 10.

System 10 is comprised of three main subsystems, viz., the master command module 12, the customer module 14 and the finishing module 16.

Master command module 12 is comprised of a master microcomputer 18 equipped with an integral hard magnetic disk drive of preferably not less than 40 Mbytes for the storage of application software, utility software and diagnostic software. Master microcomputer 18 also preferably includes an integral drive for 1.44 Mbytes, 3.5" magnetic diskettes employed for running these programs, including the loading and maintenance of the text of the books to be included in the book machine library. Controllers are provide for the integral disk drives. Optical disk drives 20 are provided in communication with master microcomputer 18.

Optical disk drives 20 preferably includes a multiple of optical storage disks that employ ISO—standard 5.25" optical cartridges with a storage capacity (formatted) of not less than 650 Mbytes per cartridge, and a data transfer rate of not less than 700 Mbytes per second for the storage of machine library titles, text, promotional descriptive data and cover color graphics. In accordance with this invention, other storage media and retrieval systems may be used.

Also in communication with microcomputer 18 is a clerk console display screen 22 which is provided with both computer display and touch sensor screen capabilities. Clerk console 22 preferably includes a computer screen with a diagonal receiving measurement of not less than 12" and a display resolution of 640×350 picture elements (pixels). The touch sensor integrated with the clerk computer screen has a resolution of not less than 1 part in 1024 and a diagonal measurement of not less than 12".

Master microcomputer 18 may transmit and receive data transmissions via modem 24 through the public telephone network to receive data corresponding to the text and cover graphics of an additional book or books not yet in the machine library. Further, credit card transactions can automatically and instantly be consummated and recorded through the telephone network as is well known in the art.

Master microcomputer 18 also communicates with a page printer 26 and a color printer/plotter 28. Page printer 26 is comprised of a number of non-impact laser printers capable of printing, upon command by microcomputer 18, on both sides of paper loaded therein, the entire text of a book to produce the paper pages thereof. The use of multiple low speed printers allows the machine to accomplish its task in the event that one printer should fail during the printing process. The page printer 26 preferably provides a resolution of not less than 0.085 mm, a printing speed of not less than 20 duplex impressions per minute.

Color printer/plotter 28 is adapted to produce a pictorial color cover upon command by microcomputer 18, and is comprised preferably of a multiple color printer/plotter with a dot resolution of 0.085 mm., on paper, vellum and poly film; and includes a parallel data interface.

Customer module 14 includes a data management unit 30 being provided with a microcomputer 32 and a plurality of optical disk drives 34 in communication therewith, preferably one to four customer consoles 36 and a credit card

reader 38 for each console. Microcomputer 32 is equipped with an integral hard magnetic disk drive preferably of not less than about 40 Mbytes for the storage of application software and customer assistance text; an integral drive, for example, for 3.5", 1.44 Mbytes magnetic diskettes for application program loading and data backup functions; controllers for the integral disk drives; a controller for the optical disk drives 34; and communications interfaces with master control module 12 and customer consoles 36. Optical disk drives 34 are erasable and employ ISO-standard 5.25" optical cartridges with a storage capacity (formatted) of not less than 650 Mbytes per cartridge, and a data transfer rate of 700 KBytes per second for the storage of library indexes, library titles, color graphic data and promotional sales descriptive data.

Customer consoles 36 are preferably provided with a customer seat and an ambient light level suitable for viewing the color computer monitor screen 40. Color computer monitor screen 40 is preferably not less than 14" of diagonal viewing area with a maximum resolution of 1024×768 pixels, and includes a touch sensor integrated with the monitor having a resolution of 1 part in 1024 and a diagonal measurement of not less than 14". Each customer console 36 also includes a microcomputer 42 which includes controllers for the color screen monitor 40 and the touch sensor therewith, an interface with the data management unit 30 and a memory unit in which resides the customer application software.

Finishing module 16 includes a jogger table 50 for aligning the paper pages stack, a parallel paper cutter 52 for cutting the text paper pages into the required size for any particular book in the machine library, a thermal binder 54 for binding the text pages together with a spine and the color cover there around, and a delivery tray 56 to which the finished book is conveyed for pick-up by the customer.

The application software for the master microcomputer 18 which resides in the integral hard magnetic disk creates labeled touch pads on the clerk console screen, identifies and locates the coordinates of a finger pressure on the touch sensor of clerk console 22 and translates the coordinates into commands that provide for (a) adding new book titles, text and descriptive material data to the optical disks 20 and transferring subsets of this data to the customer module data management unit microcomputer 32 for transfer to the data management storage disks 34; (b) executing and summarizing purchase transactions from credit card reader 38 or clerk console 22 and preparing periodic reports; (c) generating daily reports for publisher royalties; and (d) conducting system health diagnostics on all active elements of the system and displaying the results of these checks on the clerk's console screen.

The application software for the data management unit microcomputer 32 provides for (a) the receipt and execution of commands received from customer console microcomputer 42; (b) the retrieval of book titles, graphics and descriptive data from storage in optical disks 20 in response to commands, and the transfer of same to optical disk 34; (c) the transfer of purchase commands to master microcomputer 18; and (d) the execution of diagnostic commands and the transfer of system messages to master microcomputer 18.

The application software for the customer console microcomputer 42, (a) creates labeled touch pads on customer console computer screen 40; (b) identifies and locates the coordinates of a finger pressure on the touch sensor and translates the coordinates into customer commands; (c) transfers commands to data management unit microcomputer 32 and receives commands and data, such as book lists, book text, sales promotional information and graphics, etc., and (d) interprets commands and displays information on color computer display 40.

OPERATION

Book manufacturing system 10 employs three major steps for operation: (a) Initial preparation and storage of source data; (b) process for customer browsing and purchase selection; and (c) physical printing and assembly of selected book.

DATA PREPARATION

The book data that is employed by the system is comprised of three elements: (a) the textual contents of the book, (i.e., text pages, index page, table of contents, Library of Congress notice, fly sheets, etc.); (b) descriptive material such as a synopsis, plot outline, author's biographical summary, etc., (i.e., those textual materials that are promotional in nature); and (c) color cover graphics.

The source of this data will usually be the publisher of the book, and each book is first translated from its source media to a specified format for recording on 3.5", 1.44 Mbytes diskettes. One diskette stores up to 450 pages of textual material. A companion diskette stores cover graphics data in a compressed format and a minimum of 10 pages of descriptive text.

The system employs optical storage cartridges 20 as its data source, and initially the library of books that the publisher or system owner wishes to be made available to the system must be transferred from magnetic to optical media. This is accomplished by employing stand alone subsets of the master control module hardware and software to read/verify the diskette data, compress the textual and graphics data, and write/verify the optical data. Each optical storage cartridge has the capability of storing up to 1,140 sets of textual, graphics and descriptive data; there are built-in provisions for up to five (5) additional optical disk drives to be installed thus providing an on-line book capacity of 7,840 books. The total system capacity is limited only by the number of optical disks required for a given store. The additional optical disk would require operator loading.

Additions to the existing storage library are shipped to system owners via magnetic media or, alternatively, over the telephone modem, and transferred to the appropriate optical storage cartridge by the master control module utility program.

When updating by magnetic media in the form of two diskettes, the clerk touches a 'manual update' command block displayed on the clerk's console screen 22. The utility program then causes data to be displayed instructing the clerk as to which optical disk cartridge to load into disk drive 20, the order in which the diskettes are to be loaded, and the command blocks to be touched in order to verify the integrity of the data transfer from each diskette. Software interlocks ensure the correct sequencing of commands and maintain the integrity of the stored data. The diskettes can be retained for backup purposes.

In the event that updates are transferred via telephone modem 24, the utility program routes each update transfer block (2.88 Mbytes) to an area of the integral hard magnetic disk in microcomputer 18 specifically reserved for this function. The utility program then causes data to be displayed instructing the clerk as to which optical disk cartridge to load into optical drive 20 and the command blocks to be

touched in order to verify the integrity of the data transferred from the hard disk, it is compressed and transferred to the optical disk. Following transfer to the optical disk, the clerk will be instructed via the computer screen **22** to insert two blank diskettes (for data backup recording purposes) in a specific sequence and to actuate labeled command blocks when each block transfer is complete. Software interlocks ensure the correct sequencing of commands and maintain the integrity of the stored data. This sequence is repeated for all data that was transferred via the modem, following which the reserved area of the hard disk is erased upon initial system loading of the library cartridges **20** and of subsequent additions, utility software in the master microcomputer **18** creates an index by author and title of all books available in the system, and copies the descriptive material of each book, together with a low-resolution subset of its cover graphics to the optical storage unit **34** of the data management unit **30** of customer module **14**, to provide a graphic and descriptive index of not less than about 4000 books per cartridge drive. There can be built-in provisions for a total of up to six drives to be installed, providing a total capacity of customer review material of about 24,000 books per system.

CUSTOMER SELECTION

All customer actions are conducted within customer console **36**. The customer seats him or herself in front of computer screen **40** which initially displays a preprogrammed graphics and text message selected by the system owner and invites the customer to touch any part of the screen to initiate the dialogue. For all subsequent customer/system interchanges, the screen will display a series of labeled vertically-oriented command boxes on the right side of the screen, with requested data and graphics being presented in the remaining area of the screen. A "help" command block will be present on each transaction screen to assist the customer in accessing the system, and all text display formats include a touch 'dragging' feature that enables the customer to browse forward and backward through the displayed text at his own pace. A visual feedback is made to each touch and a double tap will "undo" the selection. The transactions available to the customer include, but are not limited to: (a) display of current best sellers, with selection resulting in a display of the book; (b) searching by title or author, with selection resulting in a display of the book; (c) browsing through descriptive material provided by the publisher; (d) making another selection; and (e) requesting purchase of a book.

Each customer console **36** is a stand alone unit with local storage and is a node on a high-speed data network for access to the data management unit **30** for graphic and descriptive data and for requesting a purchase. Application software within data management unit **30** retrieves the graphic or descriptive data requested by a customer console, decompresses the data and routes the data to the requester. Library integrity is maintained by operating the optical storage unit in a read-only mode and by the interlocking of command software such that only logical command sequences are accepted.

Following a purchase command, the customer is advised of the waiting time for delivery of the finished book which usually will be three to five minutes. Applications software maintains track of printing status and advises individual customer consoles of the expected time of book delivery.

PRODUCT DELIVERY

A purchase request from customer module **14** results in the clerk being notified by a screen message of the optical storage cartridge to be loaded. This loading may be accomplished automatically within the master command module **12** or manually by the clerk. Following this action, the clerk may be requested to verify the status of printer **26** in terms of paper availability, toner levels, etc., and to load the book cover material into color printer/plotter **28**. It is contemplated that this step may also be accomplished fully automatically. Upon cash payment by the customer at the clerks station, or upon credit card payment and verification through credit card reader **38**, printing and plotting are initiated.

The applications software resident in the master command microcomputer **18** accepts a purchase command from the customer module, checks printer status and returns a message to the requester of anticipated delivery time. The purchase command includes title data that is used to format a display to the clerk's screen identifying the optical cartridge to be mounted either automatically or manually. Data is then retrieved from optical disk **20**, data is decompressed and routed to printer/plotter **28**, and text data is decompressed, ordered and formatted for double page/double side printing and routed to printer **26**.

On completion of the printing/plotting operation master microcomputer **18** is signaled and it commands a conveyor to transfer the collated stack of paper text pages to jogger table **50** to achieve paper alignment, then to paper cutter **52** for reduction of the size of the paper to the desired dimension for the particular book and thence on to thermal binder **54** where the paper stack is clamped. The finished cover sheet is transferred from printer/plotter **28** to binder **54** where a binding spine is carried across a glue cylinder to the paper pages and the cover sheet is creased around the pages and the spine to achieve a finished book. The book is then conveyed out of finishing module **16** via delivery tray **56** for pickup by the customer.

Within the broader aspects of this invention, those skilled in the art will recognize that, depending on the type of printing operation and blank paper used, the above-described jogging and paper trimming operations may not be required.

The computer-related hardware components of the present invention are readily available. In order to aid one of ordinary skill in the art in the production and practice of the novel system, the following list of specific possible hardware components is provided; however, it should be understood that the list provides only examples of available hardware, and the characteristics of the particular hardware cited do not limit the scope of the present invention.

CUSTOMER MODULE (14)

Customer Console (36)

Computer Display (40)—16" 1280×1024 pixel high resolution video monitor similar to a Mitsubishi 16L Diamond Scan, equipped with a touch screen similar to an Elographics AccuTouch resistive sensor.

Microcomputer (42)—Intel 286-based microprocessor configured as a diskless node on a LAN network with 4 megabytes of high speed random access memory, a CVGA graphics adapter card and a touch screen serial controller similar to a CompuAdd model 64772 212w Arcnet-linked diskless workstation with 4 megabyte option and an Elographics 274-150 RS232 controller card.

Data Management Unit (30)

Microcomputer (32)—Intel 386-based 25 MHz microprocesser configured with 16 megabytes of RAM memory, an Intel 80387-25 math coprocessor, an 80 megabyte (19

millisecond access) hard disk drive, a 1.44 megabyte diskette drive, dual disk controllers, LAN network controller card and optical disk controller cards similar to CompuAdd model 64837 with 16 megabyte option, 80837-25 coprocessor option, Arcnet 8-port active hub, and optical disk controller card(s).

Optical Disks (34)—ISO-standard read/write option storage system expandable in 650/1300 megabyte storage increments similar to the Alphatronix Inspire model IPA20-D.

MASTER COMMAND MODULE (12)

Clerk Console (22)—14" 640×350 pixel medium-resolution monochrome video monitor similar to a Mitsubishi Diamond Scan, equipped with a touch screen similar to an Elographics AccuTouch resistive sensor.

Master Microcomputer (18)—Intel 386-based 25 MHz microprocessor configured as a LAN network node, with 16 megabytes of RAM memory, an Intel 80387-25 math coprocessor, a 320 megabyte (18 millisecond access) hard disk drive, a 1.44 megabyte diskette drive, dual disk controllers, LAM network controller card and optical disk controller cards similar to CompuAdd model 64839 with 16 megabyte option, 80837-25 coprocessor option. Arcnet 8-port passive hub, printer controller, color printer/plotter controller, Modem (24)—Bell 212, CCITT V.32 compatible full duplex 9600 baud add-in modem similar to Black Box Model TK-MD909-C and optical disk controller card(s).

Optical Disks (20)—ISO-standard read/write optical storage system expandable in 650/1300 megabyte storage increments similar to the Alphatronix Inspire model IPA20-D.

Page Printer (26)—one or more Adobe PostScript compatible laser printers with duplex printer capabilities configured to provide an aggregate printing rate of not less than 20 impressions/minute similar to 3 or more Hewlett-Packard LaserJet Series IID, Color Printer/Plotter (28)—300 dpi, 8 color pen printer/plotter similar to Hewlett-Packard 7475A, or alternative Toyo TPG 4300 full color video printer.

FINISHING MODULE (16)

Thermal Binder (54)—semiautomatic binding machine employing the hot glue process and incorporating jogging, clamping, cover sheet forming and gluing mechanisms similar to the PLANAX Autotherm IIIS.

Referring now to FIGS. 3 and 4, a second and now preferred embodiment of the computer based book storage, selection, printing and binding system of the present invention is indicated in its entirety by reference character 101. In general, system 101 comprises one or more electronic kiosks as customer modules 103 networked to a master module 105 which maintains a database of books stored in an electronic book storage means (e.g., in a CD ROM jukebox, as will be described hereinafter) in a unique digital, book-description format (as shown in FIG. 5 and as described hereinafter) such that on consumer demand, a single copy of a selected book (including the text pages and a color cover) may be printed via high-speed raster printing engines. The text pages and the cover are then thermally bound into a single copy of the selected book while the consumer waits about three to five minutes.

The electronic kiosks are utilized by the consumer for book browsing and selection which is done via a touch screen while viewing graphical simulations of actual objects and books including covers, flyleaves, table of contents, and elements of the book body. Full motion video and stereo audio programs of background MIDI music and digitized speech and sounds describing the books are also presented in synchronization. The data comprising the graphical simulation and, video and audio program are stored locally within the data storage element of the kiosk thus implementing a local cache component of a distributed, hierarchical storage system when combined with the master module's internal hierarchical storage subsystem. The kiosks are interconnected to the master module via a wireless local area network (LAN) to simplify placement.

It will be understood that while the customer modules or kiosks are preferred, they are not necessary to the operation of the book system 101 of the present invention. In place of the customer modules, a customer may merely tell a clerk operating the master module 105 what book has been selected and the clerk may enter the appropriate code for the book selected to enable the apparatus to retrieve the book from storage and to print and bind the book in the manner described.

The master module maintains a large database of book covers and text bodies stored in a unique, digital book description format specifying all attributes of a standard published book and tailored for high-speed raster printing. Upon selection of a book at a kiosk, a book printing command is sent to the master module which then reads the book data from the master module storage subsystem. The book cover data is sent to a color, raster print engine in synchronization with the book body being sent to high-speed, duplexing, raster print engines. The book cover and body are then combined and moved to an automated, thermal book binder where the book is perfect bound. The master module utilizes a hierarchical storage system consisting of high speed magnetic disk elements and lower speed, CD-ROM optical disk elements. The master module also utilizes a wide area network connection to a larger central database of books from which a book maybe uploaded to the site-based book machine.

The singular nature of this machine differentiates it from other general purpose machines of a similar kind which require routine adjustment and intervention. Other general purpose machines, although capable of document production are not specifically designed to be consumer operated for the on demand, automatic manufacturing of a single book at the point of sale.

System 101 is comprised of two main subsystems, a master module 105 and a customer module 103. A finishing module 107 is considered part of the master module, but it may be located remote for master module 105. More particularly, master module 105 is comprised of a master-client computer 109, a book server computer 111, a printing server computer 113, and a binding server computer 115. Preferably, each of these computers is equipped with not less than 16 Mbytes of program memory, a 1.44 Mbytes 3.5" magnetic diskette drive, and 500 Mbytes of integral magnetic disk storage for the storage of the operating system and application and utility programs. The book server computer 115 also preferably includes a 21 Mbytes floptical disk drive 117 for transferal of a single book from one of the thousands of such books stored in a 650 Mbytes CD-ROM drive 119. A RAID level 5 fault tolerant disk array 121 preferably having a storage capacity of not less than about 2 Gbytes is used for the temporary storage of book data utilizing a least recently used algorithm for book replacement. CD-ROM jukebox 123 of not less than 40 CDs for on-line storage of not less than about 2,000 or more books and as many as about 10,000 books (depending on the length of the books or other publications stored) in a digital book description format, preferably (but not necessarily) in the format

described in FIG. 5.

More particularly, the book description format of the present invention, is divided into three portions. First, there is a Book Attributes Description which includes eleven (11) different informational attributes about the book that would help one find common information about the book. These include the title of the book, its ISBN number and other information (as shown in FIG. 5) which help to describe the book and to provide the potential customer about the book. It may also include an abstract of the book. Further, the book format includes information concerning the contents of the book, as listed under the Book Contents Description listed on FIG. 5. Lastly, the book format include the actual contents of the book including its cover and the body of the book which may consist of stored graphical images of the cover and the text pages of the book stored in a bit mapped or raster image format.

It will be appreciated that the Book Attributes and Book Contents Description of the book format of the present invention are separated from the actual content of the book. This allows the attributes of a book to be entered onto the database of the apparatus of the present invention by knowledgeable clerical personnel having the actual printed book in front of them and entering the requested information concerning the book into the data format system. It will be appreciated that this information is stored in a format which is searchable by the master-client computer **109** so that this information may be searched by the apparatus of the present invention. In this manner, all of the Book Attributes, including key words, may be searched at the request of the customer so as to located a book, even when the title, author or other key information is not known to the customer.

Once this information has been entered, the actual contents of the book (i.e., the cover of the book and the actual pages of the book) may be scanned as graphical images and stored in a digital, bit mapped (rasterized) image format. In that manner, after the book is located using the information contained the Book Attributes Description and the Book Contents Description, the actual physical pages of the book which are desired to be printed (either the entire book or only selected pages or chapters of the book) may be readily selected and retrieved from either the RAID disk array **121** or the CD-ROM jukebox **121** and transferred to the printer server computer **113** and then printed as bit mapped or rasterized images by the color laser print engine **147** (for printing the color cover in the exact form of the publisher) or as the book text pages, as printed by the black and white laser printer **149**. It will be appreciated that the by sending bitmapped pages to the print engines, that the throughput of the printers is maximized and the entire book can be printed in about 3–5 minutes, depending on the number of pages in the book.

While the graphics of the cover of the selected book may be faithfully reproduced by color printer **147** such that the book manufactured by the apparatus of the present invention will appear to be similar to the book printed by the book publisher, it may not be preferred that the actual color cover be printed. Instead, a color (or even a black and white) cover which is more genetic to such re-published books may be used. Of course, if color covers are not required, the color print engine **147** would not be required.

Another advantage of the book description format of this invention is that it allows the ready selection or either an entire book or only selected parts of one book or from a number of books for compiling anthologies of the same author or different authors. For example, selected chapters from different books with a common author may be combined, or chapters of different authors on common subjects may be combined. Such combined books would have particular application in the education field as teachers could design their own text books by picking and choosing the exact chapters that they may wish to cover in a particular course.

Those skilled in the art will recognize that by storing the book text information in a bit mapped book description format, as above described, several advantages are realized. First, the bit mapped format allows better compression of the data and allows the direct rasterized printing of the bit mapped (or rasterized image) cover and text pagers without having to translate a graphical or word processing format (such as Postscript commercially available from Adobe). This allows for high speed selection of a selected book from a plurality of books in the library. It also allows for high speed raster image (bit mapped) printing. This eliminates the need to translate from another format prior to printing. It also insures that the format of the book, as established by the publisher is maintained when the book is printed using the apparatus of the present invention. This format also allows for ease input of the books into the system not stored in an electronic format because is allows for the pages of the book to be scanned.

CD-ROM Jukebox **123** preferably has not less than a capacity of 40 CD-ROM platters each of a capacity of 650 Mbytes, and a data transfer rate of not less than 700 Mbytes per second for the storage of both book catalog data and book printing data. Book printing data is stored in a unique book description format, optimized for raster printing and specifying all attributes of a standard published book. In accordance with this invention, other storage media and retrieval systems may be used.

All computers **109–115** inter-communicate via an internal Local Area Network (LAN) hub **125** also to which is attached a wireless LAN control module **127** for communication with the customer modules **103**, a LAN bridge **129** is provided for high speed receipt of books via a Wide Area Network (WAN) connection from the central book database (e.g., a database of many thousands of books stored on a remote central computer [not shown]) such that publications not stored on CD ROM jukebox **123** may nevertheless be used to select and to print a book. It will be understood that the above-described wide area network may include the public telephone lines and satellite communications. For example, a store having one of the apparatus of the present invention installed therein may call up the host or central computer located remotely from the store via the public telephone network to request a book not stored within the apparatus. Then, the central computer may transmit the book to the store via a satellite down link. A LAN modem **13 1** for access to the public telephone service for book request from the central book database (remote central computer), for credit card transactions, for transmittal of transaction data, and for communication of equipment status.

Also part of the master module **105** is a clerk console **133** which is provided with a super VGA display monitor **135** with touch panel **137**, a pair of powered audio speakers **139**, an industry standard extended keyboard **141**, and a credit card reader **143**. The clerk console **133** is used by the clerk to monitor all equipment and to assist in customer transactions. The display monitor with touch panel **31** has a diagonal measurement of not less than 17", with a display resolution of 1024×768 pixels, and a touch panel sensitivity of not less than 1 part in 1024. The powered audio speakers **139** include integral amplifiers of not less than 20 watts

RMS.

The clerk console **133** normally operates in conjunction with the master-client computer **109** in a control and monitor mode. In this mode the clerk can monitor the status of all equipment, can simultaneously assist in customer transactions employing a credit card reader **143** for purchase authorization as needed, and can utilize the extended keyboard **141** to perform standard maintenance and book loading procedures via the floptical drive **117** and the CD-ROM drive **123**.

The clerk console **133** can also operate fully as a customer module **103** using customer module application programs executing on the master-client computer **109**. The powered audio speakers **139** are utilized for playback of background audio programs while the clerk console is being utilized as a customer module. This mode of operation allows the master module **109** to operate fully as a single copy, high speed book manufacturing system without customer modules **103**.

All computers **109–115** share the display monitor **139** and extended keyboard **141** of the clerk console **133** via a 4 to 1 video/keyboard switch **145**. The 4 to 1 video / keyboard switch **145** is an electro-mechanical switch with push-button switch operation. Only one computer can utilize the display monitor **135** and keyboard **137**. Only the master-client computer **109** utilize the touch panel and credit card reader capabilities

The priming server computer **113** controls a color laser printer engine **147** (preferably a Xerox 5775 color laser printer) for printing of a color book cover and a high speed black and white laser printer engine **149** (preferably a Xerox 4090 laser primer) for printing of the book text pages. The color laser printer engine **147** is capable of printing color graphical book covers in a resolution of not less 300 pixels per inch and a printing speed of not less than 6 impressions per minute on paper sizes of 8.5"×5", 8.5"×11", 8.5"×14" and 11"×17" with weights of 17 lb. to 21 lb. bond. The high speed black and white laser printer **149** preferably provides a resolution of not less 300 pixels (i.e., 300 dots per inch) and a printing speed of not less than 90 impressions per minute on paper sizes of 8.5"×5", 8.5"× 11", 8.5"×14" and 11"×17" with weights of 17 lb. to 21 lb. bond.

As indicated at **151**, a paper handler receives both the text pages and the color cover printed by printer engines **149** and **147**, respectively, and assembles them for binding in a thermal binding machine **153**. Preferably, the binding machine is a Bindfast 5 commercially available from Standard Duplicating Equipment Company which must be modified such that it will automatically bind the book upon instruction from the binder server computer **115**. Once the book is bound, it is discharged from appararus for being inspected and given to the customer.

Customer module **103** includes a customer console **155** with a Super VGA display monitor **157** with touch panel **159**, a pair of powered audio speakers **161**, an industry standard extended keyboard **163**, and a credit card reader **165**. The customer module also includes a client computer **167** and a wireless Local Area Network user module **169** for network connection to the master module **105**. Customer consoles **155** are preferably provided with a customer seat and an ambient light level suitable for viewing the display monitor **157**.

The customer module display monitor **157** with touch panel **159** has a diagonal measurement of not less than 17", with a display resolution of 1024×768 pixels, and a touch panel sensitivity of not less than 1 part in 1024. The display monitor with touch panel **159** is used by the customer to browse the book catalog. Graphical simulations of objects and books are displayed in conjunction with promotional material and may be accompanied with full motion video. The simulations are manipulated by the customer and via the integral touch panel. The extended keyboard **163** is not used by the customer but is included for use by field support and maintenance personnel. The credit card reader **165** is used by the customer for unassisted sales authorization. Book manufacture proceeds automatically once a credit card sale is authorized. Cash sales require clerk assistance.

An accompanying stereo audio program of background music and digital sounds may optionally be played via the powered audio speakers **161** in synchronization with the video and graphics Digital sounds may include sounds effects as well as book reviews and other human voice materials. The powered audio speakers **161** include integral amplifiers of not less than 20 watts RMS.

The customer module client computer **167** is equipped with not less than 16 Mbytes of program memory, a 1.44 Mbytes, 3.5" magnetic diskette drive, and 500 Mbytes of integral magnetic disk storage of the operating system, application and utility programs, and of book graphical and other promotional data. The client computer **167** provides control of the display monitor with touch screen **159** as well as of the credit card reader **165**, the wireless LAN controller **169**, and of the powered audio speakers **161**. The interface to the touch screen panel **159** and credit card reader **165** are via RS232 serial interfaces. A MIDI and digital sound adapter is utilized for program control of the powered audio speakers **165**. An ethernet adapter card (not shown) is utilized for the interface to the wireless LAN user module **169**.

In regard to the embodiment **101** described in FIGS. **3** and **4**, operation and data preparation are as follows:

The application software for the master-client microcomputer **109** which resides in the integral hard magnetic disk creates labeled touch pads on the clerk console screen **135**, identifies and locates the coordinates of a finger pressure on the touch sensor of clerk console **133** and translates the coordinates into commands that provide for (a) adding new book titles, text and descriptive material data to the disk array **121** or CD-ROM jukebox **119**, and transferring subsets of this data to the customer module client computer **167**; (b) executing and summarizing purchase transactions from credit card reader **165** or clerk console credit card reader **143** and preparing periodic reports; (c) generating daily reports for publisher royalties; and (d) conducting system health diagnostics on all active elements of the system and displaying the results of these checks on the clerk's console screen.

The application software for the book server computer **109** provides for (a) the receipt and execution of book catalog requests received from customer console microcomputer **167**; (b) the retrieval of book titles, graphics and descriptive data from storage in disk array **12 1** or optical disks in CD-ROM **119** in response to commands, and the transfer of same to client computer **155** in customer module **103**; (c) the transfer of purchase commands to master-client microcomputer **109**; and (d) the execution of diagnostic commands and the transfer of system messages to master-client microcomputer **109**.

The application software for the client computer **167**, (a) creates labeled touch pads on customer console computer screen **157**; (b) identifies and locates the coordinates of a finger pressure on the touch sensor and translates the coor-

dinates into customer commands; (c) transfers commands to bookserver computer 111 and receives commands and data, such as book lists, book text, sales promotional information and graphics, etc., and (d) interprets commands and displays information on color computer display 135.

OPERATION

Book manufacturing system 101 employs three major steps for operation: (a) Initial preparation and storage of source data; (b) process for customer browsing and purchase selection; and (c) physical printing and assembly of selected book.

DATA PREPARATION

The book data that is employed by the system is comprised of three elements: (a) the textual contents of the book, (i.e., text pages, index page, table of contents, Library of Congress notice, fly sheets, etc.); (b) descriptive material such as a synopsis, plot outline, author's biographical summary, etc., (i.e., those textual materials that are promotional in nature); and (c) color cover graphics.

The source of this data will usually be the publisher of the book, and each book is first translated from its source media to a book description format (as shown in FIG. 5) for recording singly on 21 Mbytes floptical disks (as shown in FIG. 3) or in sets on 650 Mbytes CD-ROM. One floptical stores up to 2 books, while a CD-ROM disk can store up to 65 books.

The system employs CD-ROMs disks in a Jukebox 123 as its primary data source, and initially the library of books that the publisher or system owner wishes to be made available to the system must be manually loaded into the jukebox 123. Each CD-ROM disk has the capability of storing up to 65 sets of textual, graphics and descriptive data. The total system capacity is limited only by the number of CD-ROM disks required for a given store. The additional CD-ROM disks not in the CD-ROM jukebox 123 would require operator loading.

Additions to the existing storage library are shipped to system owners via floptical or CD-ROM media. Alternatively, books are delivered on-demand via a high-speed wide area network (WAN) connection, and transferred to either the RAID disk array 121 or to CD-ROM jukebox 123 by the application program in the book server computer 111.

Upon initial system loading of the CD-ROM jukebox 123 and of subsequent additions, utility software in the book server computer 111 creates an index by author and title of all books available in the system, and copies the descriptive material of each book, together with a low-resolution subset of its cover graphics to the storage unit of the client computer 167 of the customer module 103 to provide graphic and descriptive index.

CUSTOMER SELECTION

All customer actions are conducted within customer console 103. The customer seats him or herself in front of computer screen 157 which initially displays a preprogrammed graphics and text message selected by the system owner and invites the customer to touch any part of the screen to initiate the dialogue. For all subsequent customer/system interchanges, the screen will display sets of graphical objects to be manipulated by the customer by means of a series of labeled vertically-oriented command buttons on the right side of the screen, with requested data and graphics being presented in the remaining area of the screen. A "help" command block will be present on each transaction screen to assist the customer in accessing the system, and all text display formats include a touch 'dragging' feature that enables the customer to browse forward and backward through the displayed text at his own pace. A visual feedback is made to each touch and a double tap will "undo" the selection. The transactions available to the customer include, but are not limited to: (a) display of current best sellers, with selection resulting in a display of the book; (b) searching by title or author, with selection resulting in a display of the book; (c) browsing through descriptive material provided by the publisher; (d) making another selection; and (e) requesting purchase of a book.

Each customer console 103 is a stand alone unit with local storage and is a node on a high-speed local area network (LAN) for access to the master module book server computer 111 for graphic, hierarchical storage subsystems, and descriptive catalog data and for requesting a purchase. Application software within master module book server 111 retrieves the graphic or descriptive data requested by a customer console, decompresses the data and routes the data to the requester. Library integrity is maintained by operating the storage subsystem in a read-only mode and by the interlocking of command software such that only logical command sequences are accepted.

Following a purchase command, the customer is advised of the waiting time for delivery of the finished book which usually will be three to five minutes applications software in the master-client computer 109 maintains track of printing status and advises individual customer consoles of the expected time of book delivery.

PRODUCT DELIVERY

A purchase request from customer module 103 results in the clerk being notified by a screen message. Following this action, the clerk may be requested to verify payment prior to initiation of book manufacture. It is contemplated that this step may also be accomplished fully automatically via credit card authorization. Upon cash payment by the customer at the clerks station, or upon credit card payment and verification through credit card readers 165 or 143, book manufacture is initiated.

The applications software resident in the printing server computer 113 accepts a purchase command from the customer module, checks printer status and returns a message to the requester of anticipated delivery time. The purchase command includes title data that is used to format a display to the clerk's screen. Data is then retrieved from book server computer 111, cover data is decompressed and routed to color laser printer 149, and book data is decompressed, ordered and formatted for duplex printing and routed to printer 147.

On completion of the printing operation, binding server computer 115 is signaled and it commands a conveyor to transfer the collated stack of paper text pages to the jogger table within paper handler 151 to achieve paper alignment, and then to thermal binder 153 where the paper stack is clamped. The finished cover sheet is transferred from printer 149 is delivered to binder 153 where glue is applied to the paper pages and the cover sheet is creased around the pages and the spine to achieve a finished book. The book is then conveyed out of the finishing module 153 and delivered for pickup.

It will be understood that since as part of the Book

Attributes portion of the book format description format of the present invention, information is provided concerning the publisher, the author and the copyrights, each time a book or portion of a book is reproduced by the apparatus of this invention, proper credit may be give to the publisher or the author such that copyright royalties or other contractual arrangements between the owner of the apparatus and the publisher may be properly calculated.

It will be readily apparent to one skilled in the art that numerous modifications may be made to the preferred embodiment of the invention as described herein above without departing from the spirit and scope of the present invention.

Having thus described the invention, what is claimed is:

1. A book manufacturing system comprising:

computer means for storing data corresponding to the text of and information concerning a plurality of books in a format retrievable by said computer means;

selection means in communication with said computer means for selectively retrieving stored data corresponding to each of such books;

means for high speed printing of the text of a selected one of said books on paper pages upon a signal from said selection means and command from said computer means;

said format describing the cover of the book in a bit mapped color format, and wherein said computer means stores and selectively retrieves data corresponding to the color graphics of the covers of said plurality of books, and

color printer means for reproducing the cover graphics of said selected one of said books on suitable cover material upon a signal from said selection means and command from said computer means.

2. A book manufacturing system as specified in claim 1 wherein there is included:

finishing means for automatically binding said paper pages together with said cover therearound to form said selected one of said books.

3. A book manufacturing system as specified in claim 2 wherein:

said selection means is a computer display terminal having a touch sensor screen means for relaying commands to said computer means.

4. A book manufacturing system as specified in claim 2 wherein:

said computer means includes a credit card reader means in communication with the public telephone network for automatically reading information on a credit card, obtaining approval to charge such credit card and charging such credit card for the purchase of a selected one of said books.

5. A book manufacturing system comprising:

computer memory means for storing data corresponding to the text of a plurality of books, and corresponding to cover graphics in a digital format,

selection means for selecting portions of such data,

computer means for retrieving said selected data in response to a signal from said selection means,

means for high speed printing of said selected text data,

means for reproducing the selected cover graphics, and

finishing means for binding such reproduced text and such cover graphics together.

6. A method of high speed manufacture of a single copy of a book or of a selected portion of one or more books comprising the steps of:

storing the text of a plurality of books in a computer in a bit mapped format,

selecting a selected one of said books or a portion of a plurality of said books to be manufactured,

commanding a computer to print the text of such selected books,

raster image printing said bit mapped text of such selected books on paper pages,

binding said paper pages together, and

storing graphical information corresponding to a cover for said selected books in a bit mapped format,

commanding a computer to reproduce said graphical information on a book cover, and

binding said paper pages together with said cover thereabout to form said selected one of said books.

7. A method of high speed manufacture of a single copy of a book comprising the steps of:

storing the text of a plurality of books in a computer,

storing a plurality of covers for books to be printed in said computer, said covers being stored in a bit mapped format,

storing sales information relating to said plurality of books in a computer,

providing means for a customer to scan said sales information,

enabling the customer to select which book or a portion of a plurality of books,

commanding a computer to print the text of said selected books and a cover in response to said selection,

retrieving the text of said selected books from a computer,

printing the text of said selected books on paper pages, and

binding said paper pages together to form said selected one of said books.

8. A method of high speed manufacture of a single copy of a book comprising the steps of:

storing the text of a plurality of books in a computer,

storing sales information relating to said plurality of books in a computer,

providing means for a customer to visually review said sales information,

commanding a computer to print the text of a selected one of said books in response to a customer's selection,

retrieving the text of said selected one of said books from a computer,

printing the text of said selected one of said books on paper pages,

binding said paper pages together to form said selected one of said books,

storing graphical information corresponding to the cover of each of said books, commanding a computer to reproduce said graphical information on a book cover, and binding said paper pages together with said cover therearound.

* * * * *

US005465213B1

(12) REEXAMINATION CERTIFICATE (4443rd)

United States Patent

Ross

(10) Number: US 5,465,213 C1

(45) Certificate Issued: Sep. 18, 2001

(54) SYSTEM AND METHOD OF MANUFACTURING A SINGLE BOOK COPY

(75) Inventor: Harvey M. Ross, St. Louis, MO (US)

(73) Assignee: On Demand Machine Corp., St. Louis, MO (US)

Reexamination Request:
No. 90/004,807, Oct. 20, 1997

Reexamination Certificate for:

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Related U.S. Application Data

(63) Continuation-in-part of application No. 07/558,759, filed on Jul. 27, 1990, now abandoned.

(51) Int. Cl.[7] G06F 19/00

(52) U.S. Cl. 700/117; 270/52.02; 270/52.18; 412/13; 705/17

(58) Field of Search 700/90, 95, 117, 700/231, 232, 234, 241; 235/380, 381; 270/52.01, 52.02, 52.18; 412/13; 705/17

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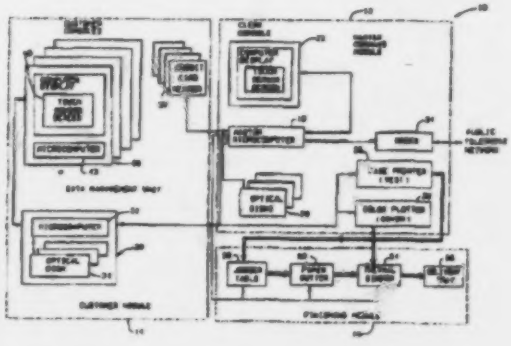
Primary Examiner—Paul P. Gordon

(57) ABSTRACT

A computer based book manufacturing, distributing and retailing system for the high speed reproduction of a single copy of a book is disclosed. The system is especially adapted for direct consumer sales since the manufacture of a selected book can take place at the point of sale. A master module includes a computer having a database of books to be selected, the books preferably being stored in a digital book-description format. Upon selection of a particular book from the database, a single copy of the book (including the text and a color cover) is printed by means of high speed raster printing engines. The system includes a binder for binding the text pages and the cover into a book.



REEXAMINATION CERTIFICATE ISSUED UNDER 35 U.S.C. 307

THE PATENT IS HEREBY AMENDED AS INDICATED BELOW.

Matter enclosed in heavy brackets [ ] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

The patentability of claims 7 and 8 is confirmed.

Claims 1–6 are cancelled.

* * * * *

Supreme Court, U.S.
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OCT 24 2006
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(3)

No. 06-449

In the Supreme Court of the United States

ON DEMAND MACHINE CORPORATION,
Petitioner,

v.

INGRAM INDUSTRIES INC., LIGHTNING SOURCE INC., AND AMAZON.COM, INC.
Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF IN OPPOSITION TO PETITION FOR A WRIT OF CERTIORARI

KEITH A. RABENBERG
Counsel Of Record
JENNIFER E. HOEKEL
SENNIGER POWERS
One Metropolitan Square
St. Louis, Missouri 63102
(314) 231-5400

Attorneys for Respondent Amazon.com, Inc.

WILLIAM K. WEST, JR.
Counsel Of Record
DAVID W. LONG
PAMELA S. KANE
HOWREY LLP
1299 Pennsylvania Avenue, N.W.
Washington, D.C. 20004-2402
(202) 783-0800

Attorneys for Respondents Ingram Industries Inc. and Lightning Source Inc.

COUNTERSTATEMENT OF THE QUESTION(S) PRESENTED

Where the Constitutional purpose underpinning the Congress' authority to grant patents is "[t]o promote the Progress of . . . useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their . . . Discoveries," the federal statutes implementing that purpose expressly requiring that the patentee provide a written description of his invention "in . . . full, clear, concise and exact terms," and this Court's holdings in an unbroken series of decisions that a patentee is entitled an exclusive right only to the invention so described, did the Court of Appeals exceed its authority in declining to construe the exclusive right of the patentee to be broader and more expansive than the invention he described in his specification?

PARTIES TO THE PROCEEDING

Pursuant to Supreme Court Rule 14.1(b), Respondents state that all parties appear in the caption of the case on the cover page.

RULE 29.6 STATEMENT

Respondents state that all parent corporations and any publicly held companies that own 10 percent or more of the stock of the party represented by counsel are:

Ingram Industries Inc.: None.

Lightning Source Inc.: Parent corporation is Ingram Industries Inc.

Amazon.com, Inc.: Legg Mason, Inc., a publicly held corporation, owns more than 10% of the company's stock.

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1 W. ROBINSON, THE LAW OF PATENTS FOR USEFUL INVENTIONS (1890) 10-11

In the Supreme Court of the United States

No. 06-449

ON DEMAND MACHINE CORPORATION,

Petitioner,

v.

INGRAM INDUSTRIES INC., LIGHTNING SOURCE INC., AND AMAZON.COM, INC.

Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF IN OPPOSITION TO PETITION FOR A WRIT OF CERTIORARI

Respondents Ingram Industries Inc., Lightning Source Inc., and Amazon.com, Inc. respectfully oppose On Demand Machine Corporation's (hereinafter "ODMC") Petition for a Writ of Certiorari to review the judgment of the United States Court Of Appeals For The Federal Circuit in this case.

SUMMARY OF REASONS TO DENY THE PETITION

The policy of the patent law, as declared by Congress and this Court, always has been to limit the exclusive patent privilege to the invention thus disclosed by the patentee. This restriction on the scope of the privilege conferred is necessary to the Constitutional purpose underlying the patent grant, "To promote the Progress of . . . useful Arts." U.S. CONST. art. I, § 8, cl. 8. Because full disclosure of inventions

is necessary to effectuate the dissemination of new technology and insure that the public will have full enjoyment of an invention upon expiration of the patent, it would defeat the Constitutional purpose to grant patentees exclusive rights that exceed the scope of their disclosures. Thus, even assuming some split in the decisions (which does not exist), Petitioner proffers no reason to justify the abrupt departure from this Court's precedents that would be required by granting exclusive rights to patentees that exceed the scope of their disclosures to the public.

The Petitioner is incorrect in alleging the existence of conflicting decisions by the Court of Appeals for the Federal Circuit; there is no conflict. Petitioner merely distorts and confuses two separate rules of thumb routinely used by the courts below in construing patent claims. Both rules, however, are entirely consistent with the fundamental principle that while a patentee is entitled to an exclusive right to his invention; the exclusive right extends only to the invention that he has described in "full" and "exact" terms in the specification of the patent. 35 U.S.C. § 112. The recent decisions of the Federal Circuit, including the decision below, do not depart from this fundamental principle. Further, viewed in light of this fundamental principle, there is no conflict between the first and second paragraphs of 35 U.S.C. § 112. Thus, there is no occasion or need for this court to invoke its supervisory authority by granting certiorari.

The decision below, while consistent with the foregoing principles, is highly factually dependent on the subject matter disclosed in Petitioner's patent. As the Court of Appeals for the Federal Circuit determined, this patent describes as its invention a specific consumer-operated "book machine" that provides for the immediate printing, binding and delivery to the consumer of a single copy of a book he selects by viewing promotional information concerning available books on a computer screen provided with the

machine. Thus, the claim in issue could not be interpreted to encompass the radically different book printing operations conducted on a "factory basis" by or at the behest of Respondents, especially since those are the very type of operations disclaimed by the patentee in the patent's specification and during prosecution in the United States Patent and Trademark Office ("PTO"). Accordingly, this case is not an apt vehicle for review of the question presented by Petitioner.

COUNTERSTATEMENT OF THE CASE

The only U.S. patent in suit is No. 5,465,213, issued November 7, 1995. Supp. App. Contrary to Petitioner's assertion that the patent "discloses and claims methods for printing books on demand" (Pet. at 2), the patentee in response to prior art cited by the United States Patent and Trademark Office ("PTO") admitted that patentee Ross did not invent printing on demand. Fed. Cir. JA A8392-8406 ("The Patent Owner is not claiming a patent for 'on-demand' printing of books. . . ."). Significantly, Petitioner does not address the alleged invention actually described in the patent.

The '213 patent describes the Ross invention as an all-in-one "book machine" that provides a computer-style display screen for a potential book purchaser (the "customer") to use to review promotional "sales information" concerning each of hundreds of books whose texts are stored in a computer database. After the customer selects a book for purchase, the machine promptly produces a single copy of the selected book by "printing its text . . . on paper pages" at high speed while the customer waits only a "few minutes" for receipt of his book at the "delivery tray" located at one end of the machine. Supp. App., '213 Patent at col. 1-3 ("Summary of the Invention").

Figure 2 of the drawings of the '213 patent, reproduced below, illustrates the book machine with the customer viewing consoles (36) located on the left and the book delivery tray (56) on the right.

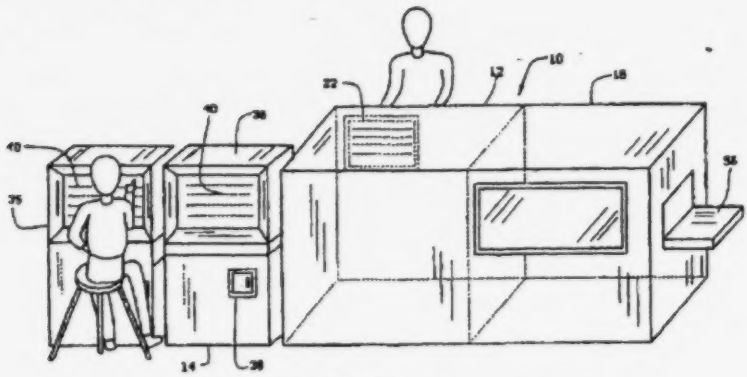

FIG. 2

The specification of the '213 patent contrasts the disclosed invention from "the production of a large quantity of copies of the same book at one time in a factory-setting," stating that

> . . . the present invention involves a computer-based system for the high speed reproduction of a single copy of a selected book, preferably at the consumer point of purchase.

Supp. App., '213 Patent at col. 1, ll. 13-19 ("Background of the Invention").

The specification further emphasizes that the "consumer operated" machine differs from other book printing methods, stating:

> The singular nature of this machine differentiates it from other general purpose machines of a similar kind which require routine adjustment and intervention. Other general purpose machines, although capable of document production are not

> specifically designed to be consumer operated for the on demand, automatic manufacturing of a single book at the point of sale.

Supp. App., '213 Patent at col. 10, ll. 36-43.

Although the '213 patent originally issued with eight claims, claims 1-6 were subsequently cancelled by the PTO in a reexamination proceeding pursuant to 35 U.S.C. §§ 302-307 based on additional prior art not previously considered. Supp. App., '213 Patent, Reexamination Certificate.

In the trial court, the Magistrate Judge construed the meaning and scope of the remaining patent claims, relying heavily on a dictionary-based methodology, now discredited, suggested by the opinion in *Texas Digital Sys., Inc. v. Telegenix, Inc.*[1]

The Court of Appeals below reviewed the district court's construction of various terms of the single patent claim at issue and disagreed with the district court's dictionary-based construction because those constructions departed from the invention described in the '213 patent. App. A at 10a–24a. Because it was essentially undisputed that the book production operations at issue did not embody the "fundamental precept" of the Ross invention that would have been gleaned by readers of ordinary skill in the art – "the immediate printing and binding of a copy of a book, where the customer initiates this activity upon review of promotional information stored in a computer that is provided by the seller" – the Federal Circuit panel concluded

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[1] 308 F.3d 1193 (Fed. Cir. 2002). The dictionary-based approach of *Texas Digital* was subsequently disapproved by the Federal Circuit, sitting *en banc*, in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1319-24 (Fed. Cir. 2005) (*en banc*) (noting that reliance on dictionary definitions invites expanding patent protection beyond anything invented by the patentee).

that "no reasonable jury could find infringement on the correct claim construction." App. A at 24a-27a.

Rehearing *en banc* was denied by the Federal Circuit on June 20, 2006.

REASONS FOR DENYING THE PETITION

I. This Court's decisions uniformly hold that the patentee's monopoly is limited by the invention described to the public in his specification, and cannot exceed it.

A long and unbroken line of decisions of this Court establish that, for reasons rooted in the Constitution, the scope of a patentee's exclusive right is determined in light of the specification of his patent and may not exceed the scope of the invention he has disclosed to the public in his specification. Thus, Petitioner's sole question has been fully addressed and resolved, and requires no further review or explication in this case.

The Patent Acts of 1790 and 1793 did not require that a patent contain claims defining the protected invention, but left it initially to a group of administrators, and later to the Federal Courts, to determine the scope of the patentee's exclusive right. *See Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 378-79 (1996); *Graham v. John Deere Co.*, 383 U.S. 1, 6-10 (1966). *Hogg v. Emerson*, 47 U.S. 437 (1848) involved a patent issued under the early Acts, and held that the specification, or descriptive "schedule," was an integral part of the patent and properly referred to in order to identify the protected invention or discovery.

> It can hardly be doubted, therefore, that the improvement referred to in the writ and in the letters-patent, with the schedule

> or specification annexed, was in truth one and the same.

Id. at 478-79.

O'Reilly v. Morse, 56 U.S. (15 How.) 62 (1854) considered Samuel Morse's patent for the telegraph, issued under the subsequent Patent Act of 1836. This Court decided that the eighth claim of Morse's patent could not be sustained because it claimed a broader invention than was described in his specification:

> This court has decided, that the specification required by this law is a part of the patent; and that the patent issues for the invention described in the specification.
>
> Now whether the Telegraph is regarded as an art or machine, the manner and process of making or using it must be set forth in exact terms. And in all of these cases it has always been held, that the patent embraces nothing more than the improvement described and claimed as new. . . . The specification of this patentee describes his invention or discovery, and the manner and process of constructing and using it; and his patent, like inventions in the other arts above mentioned, covers nothing more.

Id., 56 U.S. at 118-119, 15 How. at 121-22. In *Bates v. Coe*, 98 U.S. 31 (1878), this Court reaffirmed the principle that the descriptive specification may be referred to "in all cases" "to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims." *Id.* at 38.

In *Snow v. Lake Shore and Michigan Southern Railway Co.*, 121 U.S. 617 (1887), this Court held that the patent claim in question was necessarily limited to a detached

piston and piston-rod as described in the patent's specification.

> On this appeal, it is argued on behalf of the appellants, that this construction of their patent is too narrow; and it is now contended that the detachment of the piston and piston-rod is not an essential part of the description and claim of the invention patented. We cannot, however, but agree with the circuit judge, that the language of the specification limits the first claim to a combination in which the piston and piston-rod are detached from each other.
>
> * * * *
>
> There is nothing in the context to indicate that the patentee contemplated any alternative for the arrangement of the piston and piston-rod. The arrangement of the valves, as shown in the drawings, he declared not to be essential, and explained how they might be otherwise adjusted, and the comparative advantage and disadvantage of those plans; but no such language is used in reference to the connection between the piston and its rod.

Id. at 629-630.

In *McClain v. Ortmayer*, 141 U.S. 419 (1891), this Court observed that "the specification may be referred to to limit the claim," but "can never be made available to expand it." *Id.* at 423-24.

McCarty v. Lehigh Valley Railroad Co., 160 U.S. 110 (1895), heavily relied upon by Petitioner, is not to the contrary, nor even germane to Petitioner's question. *McCarty* held the patent in issue noninfringed, and nothing in the opinion suggests that a patent claim may validly be

broader in scope than the invention described in the specification. *Id.* at 113-20.

In *Schriber-Schroth Co. v. Cleveland Trust Co.*, 305 U.S. 47 (1938), this Court again held invalid a patent whose claims were broader than the invention described in the specification. Speaking for the Court, Justice Stone stated:

> The object of the [patent] statute [R.S. 4888] is to require the patentee to describe his invention so that others may construct and use it after the expiration of the patent and "to inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not." *Permutit Co. v. Graver Corporation*, 284 U.S. 52, 60. It follows that the patent monopoly does not extend beyond the invention described and explained as the statute requires, *Permutit Co. v. Graver Corporation, supra,* at 57; that it cannot be enlarged by claims in the patent not supported by the description, *Snow v. Lake Shore & M.S. Ry. Co.*, 121 U.S. 617.[2]

Schriber-Schroth, 305 U.S. at 57.

More recent decisions of this Court have not retreated from the principles of these earlier cases, and have continued to require that claimed inventions be construed in light of a patentees' descriptive specification, thereby assuring that patent monopolies are properly limited to inventions disclosed in the manner required by statute.

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[2] The relevant requirements of former R.S. 4888 are now contained in 35 U.S.C. § 112, first paragraph.

Markman, 517 U.S. at 389 (1996) (adverting to "the standard construction rule that a term can be defined only in a way that comports with the instrument as a whole"); *United States v. Adams*, 383 U.S. 39, 49 (1966) ("fundamental that claims are to be construed in light of the specification and both are to be read with a view to ascertaining the invention").

In sum, it is clear from this Court's prior decisions that a patentee may choose to make his patent claim more narrow in scope than the invention described in his specification (*McClain*)[3], but the claim can never be broader than the described invention (*O'Reilly*), and if the claim in fact is broader, then it is invalid (*Schriber-Schroth*). No decision of this Court holds, or even suggests, that a patent claim may be construed to be broader than the invention described. To hold that the claim may be broader would violate both the Constitutional purpose and the patent statutes that continue to require the patentee to file a specification describing his invention in "full, clear, concise and exact" terms. 35 U.S. § 112, ¶ 1. The Constitutional purpose and public policies underlying the central importance of the descriptive specification were emphasized in 1890 by Professor Robinson, stating:

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[3] Patent specifications commonly contain descriptive matter concerning prior art, background matter and other information that is not novel and forms no part of the new invention. *See Merrill v. Yeomans*, 94 U.S. 568, 570 (1876) ("It thus occurs that, in every application, the descriptive part is necessarily largely occupied with what is not new, in order to an [sic] understanding of what is new.") In such cases, where the claims properly focus on the new matter only, it is correct that the claims limit and "define the invention."

Merrill is also consistent with the decisions cited above, in rejecting a construction of the patent that would include a deodorized oil where the specification specifically described only the process for making the oil, not the oil itself, as the invention. *Id.* at 571-73.

> The invention itself must be fully communicated to the public. Of these two obligations the latter is practically the most important. Invention without publication is of comparatively little value to the state, and to reward the inventor, at the public loss, for a discovery which he endeavors for his own advantage to conceal, would be contrary to the entire purpose of the patent privilege. It is the publication, rather than the invention, which promotes the interests of the people; and although invention by some one must necessarily precede publication by any, it has always been the policy of the law to treat the publication as the meritorious act which entitles the inventor to his patent.

1 W. ROBINSON, THE LAW OF PATENTS FOR USEFUL INVENTIONS, §§ 41-42, pp. 61-62 (1890). Significantly, although Petitioner apparently argues for a new rule that would create patent monopolies broader than the inventions disclosed as the consideration for the patent, Petitioner cites *no* policy or other reason that would justify creating such unmerited windfalls for patentees.

Thus, because this Court's prior decisions fully resolve the sole question presented by Petitioner and because Petitioner fails to suggest any reason in law or policy warranting a departure from the principles stated in those decisions, a writ of certiorari is unwarranted here.

II. The recent Federal Circuit decisions do not depart from the principles announced by this Court; there is no "split".

Consistent with this Court's decisions, the *en banc* Court in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005 (*en banc*) pointed out that,

> The patent system is based on the proposition that claims cover only the invented subject matter. As the Supreme Court has stated, "[i]t seems to us that nothing can be more just and fair, both to the patentee and the public, than that the former should understand, and correctly describe, just what he has invented, and for what he claims a patent."

Id. at 1321 (citing *Merrill*, 94 U.S. at 573-74). Contrary to Petitioner's representation, there is no relevant split among the various panels of the Federal Circuit. Petitioner misreads the recent Federal Circuit decisions. All such decisions are consistent with *Phillips*, which emphasizes the importance of the patent's specification in determining the meaning of the claims. 415 F.3d at 1315-16.

Petitioner's argument also confuses two different rules of thumb employed by courts in the construction of patents: first, that patent claims are construed and in light of and consistently with the invention described in the specification and, second, that extraneous details of the inventor's preferred mode (the so-called "preferred embodiment") should not be read into the claims, at least absent some term in the claim whose meaning is made clear by the descriptive specification. The Federal Circuit explained the circumstances in which these rules may properly be applied, and their limits, in *Renishaw PLC v. Marposs Societa Per Azioni*, 158 F.3d 1243, 1248-50 (Fed.

Cir. 1998) (ascertaining the meaning of the claim term "when").

Renishaw explained that when a claim uses a particular word, it is proper to examine the patent specification to determine how the inventor used that word and what meaning it had in the context of the specification, and applying that meaning to the claim does not conflict with the notion that other details not mentioned in the claim (*e.g.*, a type of bolt, the shape of the parts, the size of the motor, etc.) should not be "read into" the claim. *Id.* at 1249. The *Renishaw* court concluded:

> Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors *actually invented* and intended to envelop with the claim. *See Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 389, 38 USPQ2d (BNA) 1461, 1470, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). The construction that stays true to the claim language *and most naturally aligns with the patent's description of the invention* will be, in the end, the correct construction.
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> * * * *
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> A claim construction is persuasive, not because it follows a certain rule, but because it defines terms *in the context of the whole patent.*

Renishaw, 158 F.3d at 1250 (emphasis supplied).

Similarly, the *en banc* court in *Phillips* explained that

> Much of the time, upon reading the specification in that context, it will become clear whether the patentee is setting out specific examples of the invention to accomplish those goals, or

> whether the patentee instead intends for the claims and the embodiments in the specification to be strictly coextensive. *See SciMed Life Sys.*, 242 F.3d at 1341. The manner in which the patentee uses a term within the specification and claim usually will make the distinction apparent. *See Snow v. Lake Shore & M.S. Ry. Co.*, 121 U.S. 617, 630, 30 L Ed. 1004, 7 S. Ct. 1343, 1887 Dec. Comm'r Pat. 354 (1887) (it was clear from the specification that there was "nothing in the context to indicate that the patentee contemplated any alternative" embodiment to the one presented).

Phillips, 415 F.2d at 1323-24.

The Federal Circuit decisions subsequent to *Phillips* demonstrate no conflict, and are consistent with the principle that patent claims are construed consistently with the patent's specification and may not exceed the invention described therein.[4] Specifically, the subsequent decisions cited by Petitioner, *Honeywell International v. ITT Industries, Inc.*,[5] *Datamize, LLC v. Plumtree Software, Inc.*,[6] *Telep v. The*

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[4] Petitioner also relies on an earlier panel decision, *Teleflex Inc. v. Ficosa North America Corp.*, 299 F.3d 1313 (Fed. Cir. 2002), but that decision also recognized the fundamental importance of the patent's specification ("[T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the best simple guide to the meaning of a disputed term." *Id.* at 1325 (citing *Vitronics Corp. v. Conceptronics, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). Thus, *Teleflex* is not inconsistent with either *Phillips* or the decisions of this Court.

[5] 452 F.3d 1312 (Fed. Cir. 2006).

[6] 417 F.3d 1342 (Fed. Cir. 2005).

Brinkman Corp.,[7] and *Collegenet, Inc. v. Applyyourself, Inc.*[8] are all based on highly specific fact situations, and none conflicts with *Phillips* or the decisions of this Court. *See Collegenet*, 418 F.3d at 1231 (meaning of claim term must be derived "from their usage and context" in the patent and its specification); *Datamize*, 417 F.3d at 1350-51 (invalidating patent claim where the specification failed to provide an objective standard for claim term "aesthetically pleasing"); *Honeywell*, 452 F.3d at 1318 ("The public is entitled to take the patentee at his word and the word was that the invention is a fuel filter."); *Telep*, 418 F.3d at 1382-83 (holding that claim term "clear plastic" requires a "transparent plastic" in view of guidance supplied by the descriptive specification). None of these decisions even come close to suggesting that a patent claim may validly be broader than the supporting specification.

III. Petitioner's question was not necessarily decided by the decision below, and this case is not an appropriate vehicle for review.

In its Decision, the Court of Appeals below merely followed the teachings of *Renishaw*, *Phillips* and decisions of this Court in construing the meaning of words and terms that appear in Petitioner's patent claims consistently with the inventor's own description of his invention. As the Decision emphasizes, and Petitioner does not dispute, Petitioner did not invent on-demand printing, but only a consumer-operated book machine utilizing a form of that well-known technology. App. A at 26a-27a. There is nothing in the content of the '213 patent to indicate that Ross contemplated

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[7] 418 F.3d 1379 (Fed. Cir. 2005).

[8] 418 F.3d 1225 (Fed. Cir. 2005).

any alternative to his consumer-operated, all-in-one book machine that would justify a broader interpretation of his claims. There is nothing to indicate that "those of ordinary skill," reading the patent, would have interpreted his claims more broadly. Moreover, Petitioner neither alleges nor demonstrates that the Court of Appeals "read in" any detail from his specification apart from the need to understand what the inventor Ross meant by the words in the claim.

Accordingly, resolution of Petitioner's question was not required in order for the Court below to reach its decision in favor of Respondents. This case therefore is not an appropriate vehicle for review of that question.

CONCLUSION

For the foregoing reasons, the Petition for a Writ of Certiorari should be denied.

Respectfully submitted,

WILLIAM K. WEST, JR.
Counsel Of Record
DAVID W. LONG
PAMELA S. KANE
HOWREY LLP
1299 Pennsylvania Avenue, N.W.
Washington, D.C. 20004-2402
(202) 783-0800

Attorneys for Respondents Ingram Industries Inc. and Lightning Source Inc.

KEITH A. RABENBERG
Counsel Of Record
JENNIFER E. HOEKEL
SENNIGER POWERS
One Metropolitan Square
St. Louis, Missouri 63102
(314) 231-5400

Attorneys for Respondent Amazon.com, Inc.

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